

ADDENDUM NO. 2

December 7, 2023

ISSUED BY:

Wichita State University Campus for Applied
Sciences and Technology
4004 N Webb Rd
Wichita, Kansas 67226

ISSUED FOR ARCHITECT/ENGINEER

GLMV Architecture
1525 E. Douglas
Wichita, Kansas 67211
Contact: Monica Abbott
Phone Number: 316-265-9367
E-Mail: monica.abbott@glmv.com

NOTICE ALL BIDDERS FOR THE:

Wichita State University Campus of Applied Sciences and Technology
WSU Tech East High Snap-On Lab
Wichita, Kansas

You are instructed to read and to note the following described changes, corrections, clarifications, omissions, deletions, additions, approvals, and statements pertinent to the Contract Bid and Construction Documents.

The Addendum No. 2 is a part of the Contract Bid and Construction Documents and shall govern in the performance of the Work.

Article 2-1, Clarification:

- A. Clarification: Please see the attached Pre-Bid Sign in Sheet.

Article 2-2, Clarification:

- A. Clarification: The portion of the building that is within the scope of work will not be occupied during construction. The portion of the building outside the scope of work of the construction documents will be utilized during construction during scheduled normal class time.

Article 2-3, Clarification:

- A. Clarification: The building is open daily 7:00am-4:00pm Monday-Friday. To access the building contact Jake McNett at 316-252-6644.

Article 2-4, Clarification:

- A. Question: Will the Fire protection System be required in only the portion of the building that is within the scope of work?
- B. Clarification: Modifications to the existing Fire Protection System is not required. Refer to the code sheet. The existing system shall not be extended into the new scope of work.

Article 2-5, Clarification:

- A. Question: Will the new exterior brick be required to match the existing brick at the new overhead door opening being added to EV Service Technology Lab 102?
- B. Clarification: Yes, the new exterior brick should match the existing brick as noted.

Article 2-6, Clarification:

- A. Question: Shall the timing for the electrical shutdown and transfer of the electrical service be completed during non-business hours?
- B. Clarification: The electrical shutdown and transfer of power can occur during normal business hours. There is not a requirement to have the shutdown and transfer of power occur on a night or weekend. At the start of the project the awarded contractor shall be required to provide a construction schedule identifying the major milestones to the owner. The electrical shutdown shall be a milestone that is reflected in the schedule. A minimum of 2 weeks' notice is required prior to the shutdown to allow for the University to adjust their class schedules.

Article 2-7, Clarification:

- A. Question: A401.4 shows PNT1 on a wet wall of 118 MEN RR. My question is that all other wet walls on the project have tile, should this wall have tile as well? Please clarify.
- B. Clarification: Correct, the existing CMU wall to remain shall be painted.

Article 2-8, Specification Section 10 2239-Folding Panel Partition Substitution Request - Clarification:

- A. Question: Substitution request for Moderco moveable wall partitions from Burns Boys Co Inc.
- B. Clarification: Moderco is an acceptable manufacturer. Reference drawings for panel finish selections.

Article 2-9, Drawing Change G-001 – COVER SHEET:

- A. Clarification: The sheet index has been revised to indicate the current drawing revision number.

Article 2-10, Drawing Change AD-101- DEMOLITION PLAN:

- A. Clarification:
 - a. Automotive lift locations revised.
 - b. Keynote 14 Revised and Keynote 21 added.

Article 2-11, Drawing Change A-101- ARCHITECTURAL FLOOR PLAN:

- A. Clarification:
 - a. Existing lifts to be re-installed.
 - b. Keynote 5 added.

Article 2-12, Drawing Change A-801- EQUIPMENT SCHEDULE:

- A. Clarification:
 - a. Revised Mark 03. Vehicle lifts are owner provided; contractor installed.

Article 2-13, Drawing Change – M-101 HVAC PLAN:

- A. Clarification:
 - a. Revised vehicle exhaust ductwork
 - b. Added note to provide aluminum sheet metal blank off on existing MZU cooling coil

Article 2-14, Drawing Change – M-601 MECHANICAL SCHEDULES:

- A. Clarification:
 - a. Added hose reel information to the exhaust fan schedule.
 - b. Revised VEF-01, VEF-02, and VEF-03 schedule information.

Article 2-15, Drawing Change – E-131 POWER AND SYSTEMS PLAN – 1ST FLOOR:

- A. Clarification:
 - a. Added site plan reference detail.
 - b. FACP is relocated.

Article 2-16, Drawing Change – E-601 ELECTRICAL ONE-LINE DIAGRAM:

- A. Clarification:
 - a. Clarified utility information on one-line.
 - b. Updated feeder schedule.

Article 2-17, Drawing Change – E-602 ELECTRICAL SCHEDULES:

- A. Clarification:
 - a. Updated mechanical connection schedule to match mechanical changes.

Article 2-18, Drawing Change – E-611 ELECTRICAL SCHEDULES:

- A. Clarification:
 - a. Added equals to light fixture schedule.

Prebid - Sign In Sheet

Name	Company	Email	Phone
1. Jason McCartney	Dean Norris	Jmccartney@Deannorris.com	316.203-9724
2. Kerry Gorbey	D + G	dandgcontracting1@gmail.com	
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11. DAVID DAUFENBACH ESI		dave@ESI-KS.COM	316.698.4289
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13. DARRIN WILBERT	Jaco General Contractor	darrin@jacogc.com	316-641-4060
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Ben Koop	Cheney Door Icon Structures	js@icon-structures.com	

Ryan Crowell HIT/ Painting

Hugo Leyva ~~#5~~ ISI

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WICHITA STATE UNIVERSITY CAMPUS OF APPLIED SCIENCES AND TECHNOLOGY

EAST HIGH SNAP ON LAB

301 S. Grove, Wichita, KS 67211

CERTIFIED FINAL

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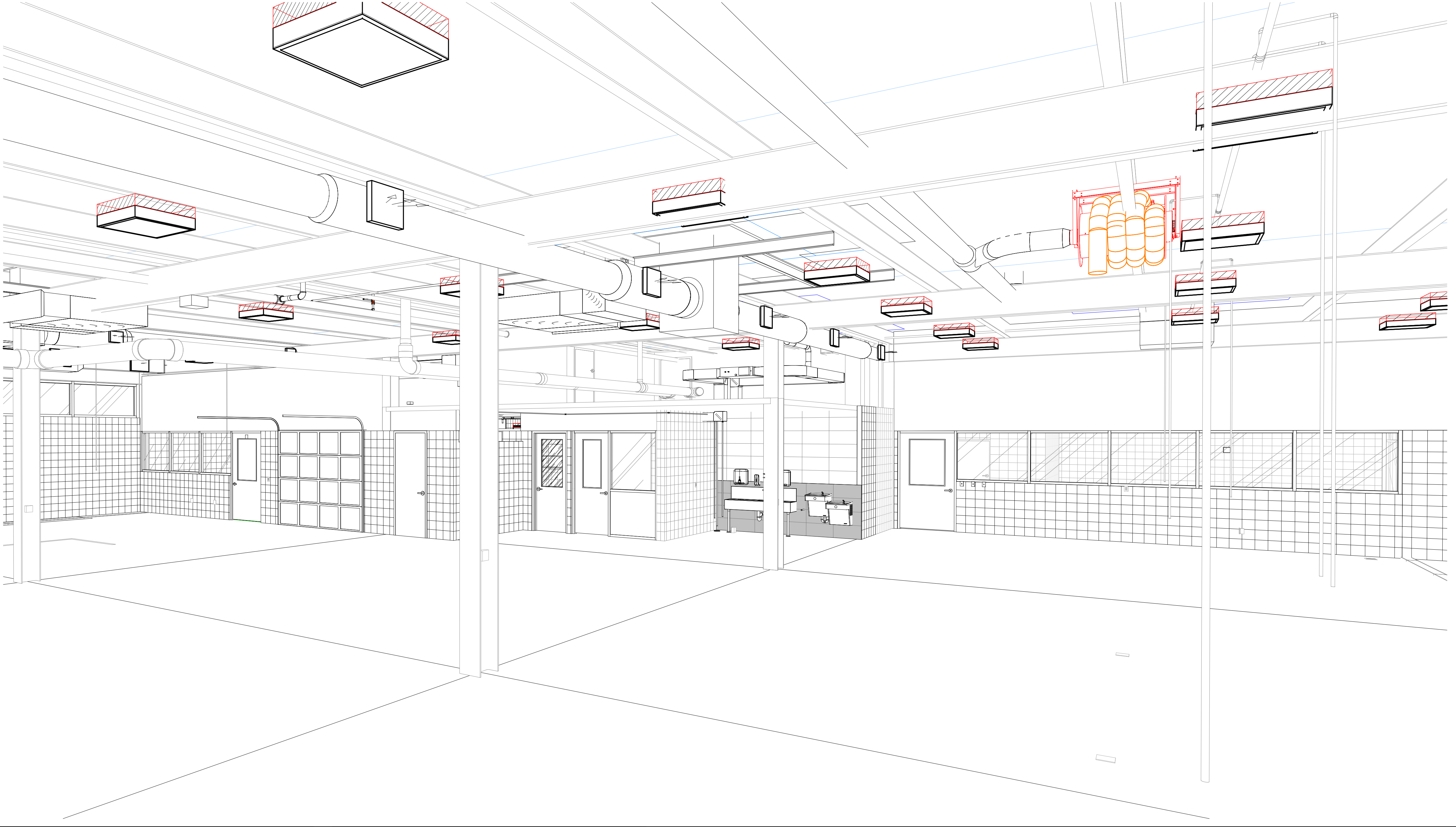
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GENERAL NOTES

- DRAWINGS AND SPECIFICATIONS SHALL REMAIN THE PROPERTY OF THE ARCHITECT AND MAY NOT BE REPRODUCED IN ANY MANNER WITHOUT EXPRESSED WRITTEN CONSENT.
- ALL SUBSTITUTIONS AND CHANGES TO THESE DRAWINGS MUST BE SUBMITTED TO THE ARCHITECT FOR APPROVAL.
- THE GENERAL CONTRACTOR SHALL INVESTIGATE ALL FIELD CONDITIONS RELEVANT TO THE PROJECT, INCLUDING BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, GENERAL CONDITIONS AND OTHER MISCELLANEOUS EXISTING CONDITIONS AND SHALL PROMPTLY NOTIFY THE ARCHITECT OF ANY WHICH DO NOT AGREE WITH THOSE IN THESE DRAWINGS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL COMPONENTS AND ACCESSORIES, EQUIPMENT, MATERIALS, HARDWARE, AND OTHER ITEMS NECESSARY (UNLESS NOTED OTHERWISE) FOR A COMPLETE AND FINISHED JOB CONSISTENT WITH THE DESIGN INTENT PRESENTED IN THESE DRAWINGS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL THE APPLICABLE BUILDING PERMITS.
- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH ALL CODES AND REGULATIONS ADOPTED BY THE AUTHORITIES HAVING JURISDICTION OVER THE LOCATION OF THE PROJECT, WHICH ARE APPLICABLE AT THE TIME OF ISSUANCE OF THE BUILDING PERMITS.
- THE GENERAL CONTRACTOR SHALL NOT REPRODUCE ANY PORTION OF THE CONTRACT DRAWINGS FOR USE IN ANY PORTION OF A SUBMITTAL.
- ALL ABBREVIATIONS INCLUDED FOLLOW INDUSTRY STANDARDS. CONTACT ARCHITECT IF ANY ABBREVIATIONS ARE NOT CLEAR.
- GRAPHIC AND WRITTEN INFORMATION ON DRAWINGS SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.
- REFERENCE SPECIFICATION FOR ALL MATERIALS NOTED ON DRAWINGS.
- THE GENERAL CONTRACTOR SHALL COORDINATE ACCESS TO/AND STORAGE ON SITE WITH THE OWNER. THE GENERAL CONTRACTOR SHALL ALSO REPAIR DAMAGE TO ALL ADJACENT AREAS OCCURRING DURING CONSTRUCTION. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL OF ALL EXCESS TRASH AND OTHER MISCELLANEOUS MATERIALS FROM THE SITE DAILY.
- PATCH ALL FLOORS, WALLS AND CEILINGS ALTERED DURING CONSTRUCTION AS REQUIRED TO MATCH EXISTING. PATCH ANCHOR HOLES IN MASONRY WALL WHERE ACCESSORIES HAVE BEEN MOVED AND/OR OMITTED.
- IN ALL EXISTING AREAS, RENOVATION WORK SHALL BE ACCOMPLISHED WITH MINIMAL DISRUPTION TO OPERATIONS. IF REQUIRED, THE OWNER RESERVES THE RIGHT TO TEMPORARILY STOP WORK OF SPECIFIC CONSTRUCTION OPERATIONS SHOULD THE OWNER IDENTIFY AN EMERGENCY OR DANGER EXISTS TO THE WELFARE OF THE OCCUPANTS ON ACCOUNT OF SUCH WORK OR OPERATIONS.
- ERECT AND MAINTAIN DUST PARTITIONS AS REQUIRED FOR ALL PHASES OF CONSTRUCTION TO PREVENT DIRT, DUST OR WET SURFACES/FINISHES FROM ENTERING ADJACENT OCCUPIED SPACES.
- SCHEDULE ALL WORK PRODUCING EXCESS NOISE OR VIBRATIONS WITH OWNER TO MINIMIZE DISRUPTION TO BUILDING TENANTS. ALL WORK FOUND TO BE DISRUPTIVE SHALL BE SUSPENDED IMMEDIATELY UPON NOTICE FROM OWNER AND RESCHEDULED IN ADVANCE TO ALLOW ADVANCE NOTICE AND ALTERNATE ACCOMMODATIONS FOR TENANTS. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE WORK IN ADVANCE SO AS NOT TO DELAY THE PROGRESS OF THE WORK.
- MAINTAIN ALL EXIT PATHS FOR THE DURATION OF THE CONSTRUCTION.
- SCHEDULE WITH OWNER ALL WORK REQUIRING THE DISABLING OF ALL BUILDING SAFETY SYSTEMS, INCLUDING BUT NOT LIMITED TO, STANDBY SPRINKLERS, FIRE ALARMS, AND SECURITY SYSTEMS. THE WORK SHALL BE SCHEDULED IN ADVANCE TO ALLOW ADVANCE NOTICE AND ALTERNATE ACCOMMODATIONS FOR TENANTS. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE WORK IN ADVANCE SO AS NOT TO DELAY THE PROGRESS OF THE WORK.
- SCHEDULE WITH OWNER ALL UTILITY SHUTDOWNS AFFECTING AREAS OF THE BUILDING BEYOND THE PROJECT LIMITS OF WORK. THE WORK SHALL BE SCHEDULED IN ADVANCE TO ALLOW ADVANCE NOTICE AND ALTERNATE ACCOMMODATIONS FOR TENANTS. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE WORK IN ADVANCE SO AS NOT TO DELAY THE PROGRESS OF THE WORK.
- ERECT AND MAINTAIN APPROPRIATE SAFETY BARRIERS AND PATHWAYS TO PROTECT AND SEPARATE PUBLIC/TENANTS FROM HAZARDOUS CONDITIONS. BARRIERS SHALL BE MAINTAINED THROUGHOUT DURATION OF THE PROJECT TO PROHIBIT UNAUTHORIZED PERSONNEL FROM ENTERING THE CONSTRUCTION AREA/SITE.
- OWNER SHALL BE RESPONSIBLE FOR RELOCATION, INSTALLATION AND STORAGE OF EXISTING FURNITURE.
- CONTRACTOR SHALL NOT REPRODUCE ANY PORTION OF A CONTRACT DRAWING FOR USE IN ANY PORTION OF A SUBMITTAL.
- ALL DIMENSIONS ARE FROM THE FACE OF STUD FRAMING, FACE OF MASONRY, FACE OF CONCRETE, OR CENTER LINE OF STRUCTURAL STEEL, U.N.O..
- ALL DOORS ARE LOCATED 4 INCHES FROM THE ADJACENT PERPENDICULAR STUD WALL FRAMING AND 4 INCHES FROM THE ADJACENT PERPENDICULAR CMU WALL FRAMING TO THE HINGE SIDE OF THE DOOR OPENING, U.N.O..
- COORDINATE THE LOCATION AND INSTALLATION OF ALL MECHANICAL AND ELECTRICAL DEVICES, REGISTERS, FIXTURES, ETC. PRIOR TO INSTALLATION OF FINISH MATERIAL.
- ALL A.D.A. ACCESSIBLE WATER CLOSETS MUST BE LOCATED 18 INCHES MINIMUM FROM THE FINISHED FACE OF THE NEAREST ADJACENT WALL TO THE CENTER LINE OF THE FIXTURE, U.N.O..
- PROVIDE CONTROL JOINTS ON CONTINUOUS GYPSUM BOARD SURFACES IN EXCESS OF 30'-0" AT A MAXIMUM INCREMENT OF 30'-0" ON CENTER, U.N.O..
- PROVIDE SEALANT IN FLOOR JOINTS OF EXPOSED FINISHES PER FLOOR COATING MANUFACTURER'S RECOMMENDATIONS.
- SEE SHEET A-601 FOR PARTITION TYPES. SEE ARCHITECTURAL FLOOR PLANS FOR ADDITIONAL PARTITION IDENTIFICATION.
- REFER TO STRUCTURAL NOTES FOR ALL CAST-IN-PLACE CONCRETE AND MASONRY CONTROL JOINTS.

RENDERING



SHEET INDEX

SHEET NUMBER	SHEET NAME	REVISION NO.
01 [G] GENERAL		
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G-101	CODE SUMMARY	
G-102	CODE FLOOR PLAN	
G-111	TYPICAL MOUNTING HEIGHTS AND CLEARANCES	
07 [S] STRUCTURAL		
S-000	STRUCTURAL COVER SHEET	
S-001	STRUCTURAL GENERAL NOTES	
S-101	FOUNDATION PLAN	
S-102	ROOF FRAMING PLAN	
S-501	DETAILS	
S-502	DETAILS	
08 [A] ARCHITECTURAL		
A-001	LEGENDS, SYMBOLS, & ABBREVIATIONS	
AD-101	DEMOLITION PLAN	ADD#2
A-101	ARCHITECTURAL FLOOR PLAN	ADD#2
A-111	REFLECTED CEILING PLAN	
A-121	ROOF PLAN	
A-201	EXTERIOR ELEVATIONS	
A-311	WALL SECTIONS	
A-401	ENLARGED PLANS AND ELEVATIONS	
A-541	DETAILS	
A-601	PARTITION/EXTERIOR WALL TYPES	
A-611	DOOR SCHEDULE	
A-621	GLAZING WINDOW SCHEDULE	
A-801	EQUIPMENT PLAN	ADD#2
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I-101	FLOOR FINISH PLAN	
I-201	INTERIOR ELEVATIONS	
I-202	INTERIOR ELEVATIONS	
I-601	FINISH SCHEDULE AND CODES	
IF-101	FURNITURE REFERENCE PLAN	

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SHEET NUMBER	SHEET NAME	REVISION NO.
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F-101	FIRE PROTECTION PLAN	
PD-101	PLUMBING DEMOLITION PLAN	
P-101	PLUMBING PLAN	
P-401	ENLARGED PLUMBING PLAN	
P-501	PLUMBING DETAILS	
P-601	PLUMBING SCHEDULES	
MD-101	HVAC DEMOLITION PLAN	
MD-120	ROOF DEMOLITION PLAN	
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M-120	ROOF MECHANICAL PLAN	
M-601	HVAC DETAILS	
M-601	MECHANICAL SCHEDULES	ADD#2
M-701	CONTROL DETAILS	
15 [E] ELECTRICAL		
E-001	ELECTRICAL GENERAL NOTES AND SYMBOLS	
E-101	ELECTRICAL DEMOLITION PLAN - 1ST FLOOR	
E-102	ELECTRICAL DEMOLITION PLAN - MEZZANINE	
E-103	ELECTRICAL DEMOLITION PLAN - ROOF	
E-131	POWER & SYSTEMS PLAN - 1ST FLOOR	ADD#2
E-132	POWER & SYSTEMS PLAN - MEZZANINE	
E-141	LIGHTING PLAN	
E-501	ELECTRICAL DETAILS	
E-601	ELECTRICAL ONE-LINE DIAGRAM - DEMOLITION	ADD#2
E-602	ELECTRICAL SCHEDULES	ADD#2
E-611	ELECTRICAL SCHEDULES	ADD#2

LOCATION MAP



ALTERNATE SCHEDULE:

- HVAC REPLACEMENT FOR NEW RTUS 1, 2, 4 AND ASSOCIATED WORK, INCLUDING DUCTWORK, PIPING, SUPPORT, AND POWER CONNECTIONS TO THESE RTUS AS SHOWN ON THE DRAWINGS.
- MODERNFOLD OPERABLE PARTITIONS AT CLASSROOMS. HEADER (REF. 11A-541) TO REMAIN AS PART OF BASE BID.



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DATE	DESCRIPTION

PROJECT NUMBER: GLMV-22090402	PROJECT TYPE: Renovation
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EAST HIGH SNAP ON LAB

301 S. Grove, Wichita, KS 67211

DATE: 11/17/2023
DRAWN BY: HL
CHECKED BY: MFC




COVER SHEET

G-001

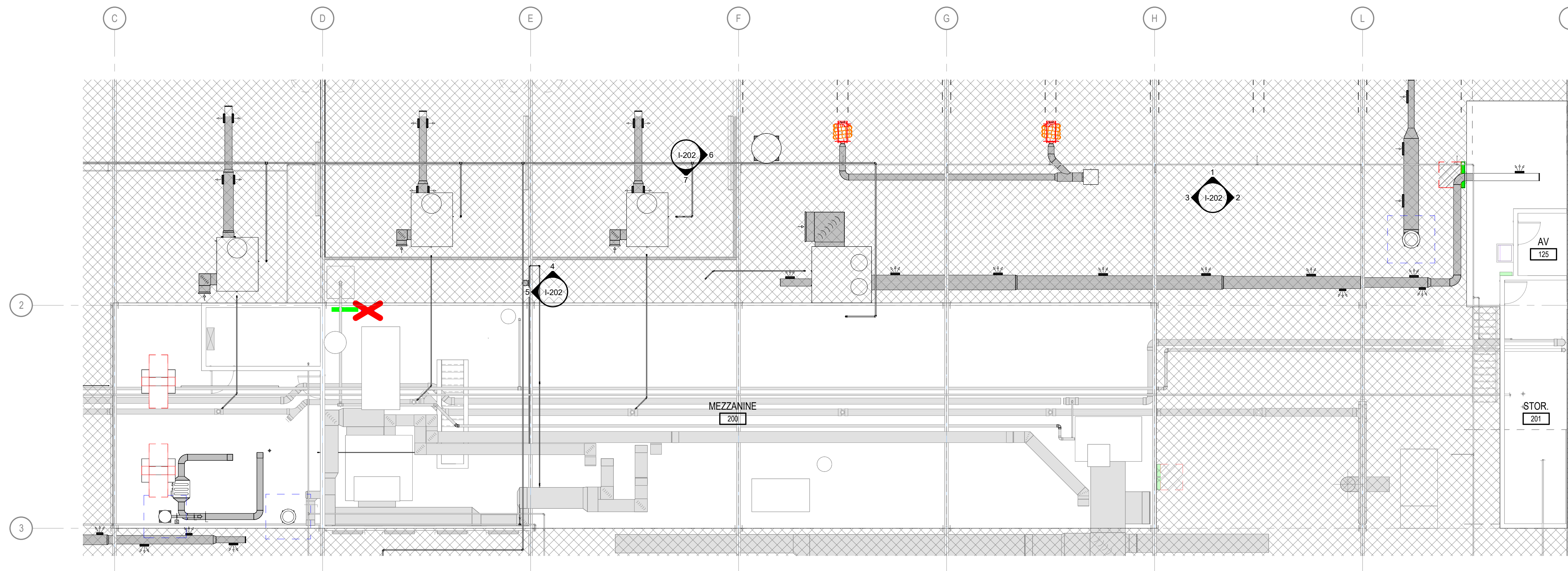
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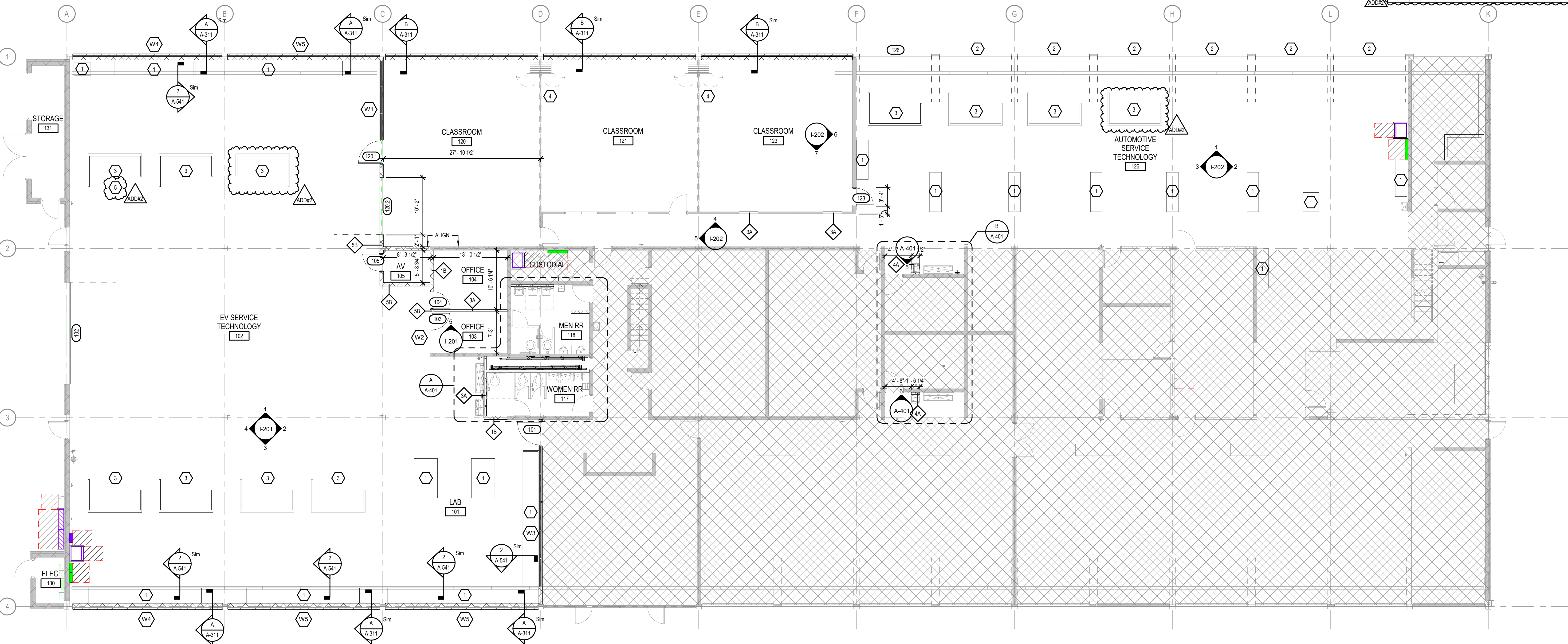
ADD#2

 AREA NOT IN SCOPE OF WORK U.N.O.
 EXISTING WALL / PARTITION TO REMAIN U.N.O.
 NEW WALL / PARTITION CONSTRUCTION U.N.O.

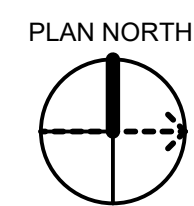
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B MEZZANINE PLAN
1/8" = 1'-0"



A FLOOR PLAN
1/8" = 1'-0"



LINETYPE LEGEND

HALFTONE LINE	INDICATES EXISTING ELEMENT TO REMAIN
SOLID BLACK LINE	INDICATES NEW ELEMENT
HEAVY DASHED LINE	INDICATES EXISTING ELEMENT TO BE REMOVED IN ITS ENTIRETY

HATCH LEGEND

AREA NOT IN SCOPE OF WORK U.N.O.
EXISTING WALL / PARTITION TO REMAIN U.N.O.
NEW WALL / PARTITION CONSTRUCTION U.N.O.

GENERAL NOTES

#	NOTES
A	DIMENSIONS ARE TO FACE OF STUD UNLESS NOTED OTHERWISE. WHERE PARTITION TYPES CHANGE, FACE OF GYPSUM BOARD MUST ALIGN WITH ADJACENT FACE OF GYPSUM BOARD.
B	CENTER ALL CEILING MOUNTED EQUIPMENT DEVICES AT CENTER OF CEILING TILES UNLESS NOTED OTHERWISE. COORDINATE WITH MECHANICAL/ELECTRICAL DRAWINGS.
C	PROVIDE CORNER GUARDS AT ALL OUTSIDE CORNERS AND ENDWALL CONDITIONS. REF. INTERIOR DRAWINGS FOR MORE INFORMATION.
D	ALL DIMENSIONS FROM EXISTING WALLS ARE FROM FINISHED FACE OF WALL.
E	ALL DIMENSIONS ON REFLECTED CEILING PLANS ARE TO FINISHED FACES U.N.O.

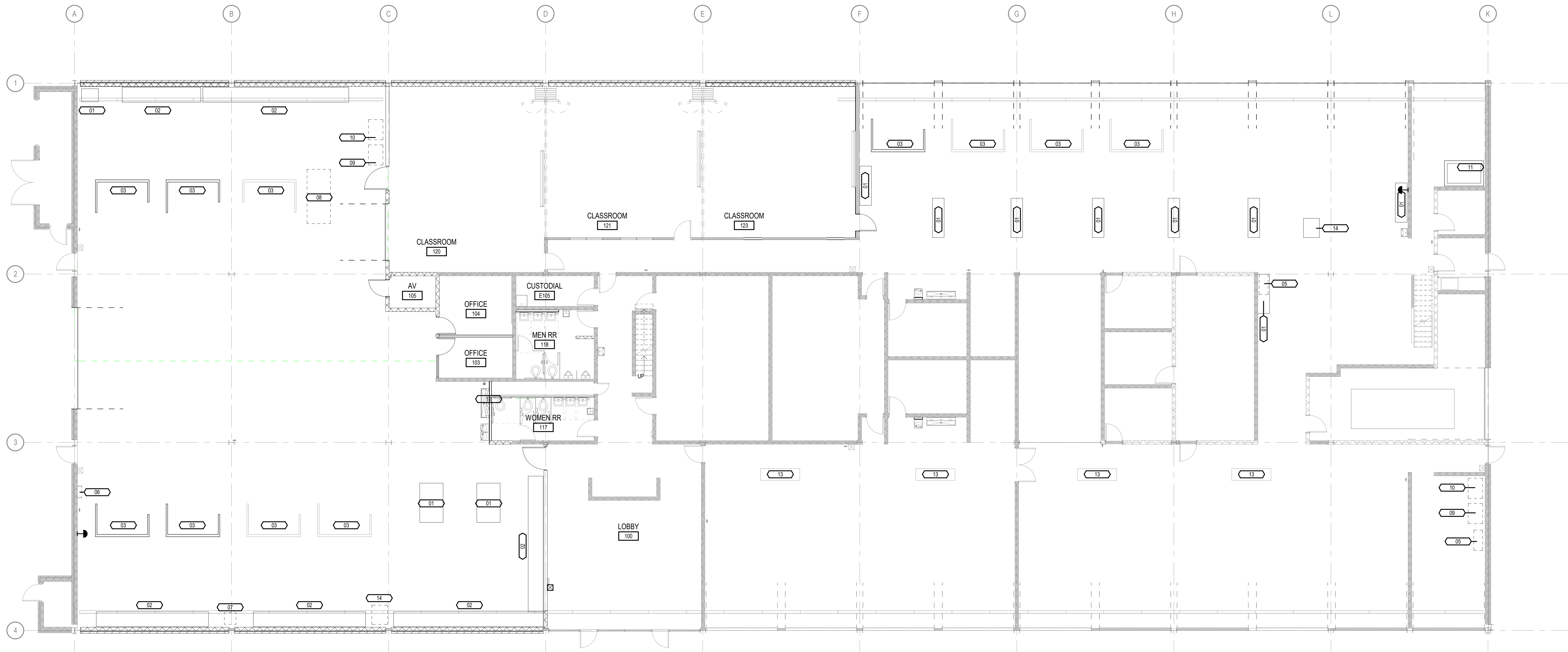
SHEET KEYNOTES

#	DESCRIPTION
1	SNAP-ON UNITS PROVIDED BY OWNER. REFER TO EQUIPMENT PLAN A-801 FOR ADDITIONAL INFORMATION.
2	INSTALL SALVAGED OVERHEAD DOOR AND ASSOCIATED RAILS, MOTOR, ETC AS NEEDED.
3	RELOCATED VEHICLE LIFT. REFER TO EQUIPMENT PLAN A-801 FOR ADDITIONAL INFORMATION.
4	NEW PARTITION. REFER TO SHEET A-401 FOR DETAILS.
5	RELOCATED VEHICLE LIFT FROM ROOM 126. REFER TO EQUIPMENT PLAN A-801 FOR ADDITIONAL INFORMATION.


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EQUIPMENT SCHEDULE				
MARK	DESCRIPTION	COMMENTS	PHASE	ELEC. REQ.
01	WORKBENCH, SNAP-ON	OWNER PROVIDED AND INSTALLED	NEW	NO
02	WORKBENCH, SNAP-ON	OWNER PROVIDED AND INSTALLED	NEW	YES
03	VEHICLE LIFT, ROTARY SPDA10	OWNER PROVIDED, CONTRACTOR INSTALLED	EXISTING	YES
04	BATTERY CHARGER, SNAP-ON D-TAC ELITE	OWNER PROVIDED AND INSTALLED	EXISTING	YES
05	BRAKE LATHE, PRO-CUT USA PFM 9.2	OWNER PROVIDED AND INSTALLED	EXISTING	YES
06	EV CHARGING STATION, ENPHASE	OWNER PROVIDED, CONTRACTOR INSTALLED	NEW	YES
07	REFRIGERANT, SNAP-ON POLARTEK HYBRID	OWNER PROVIDED AND INSTALLED	EXISTING	YES
08	LIFT TABLE, CHALLENGER LIFTS BT3300	OWNER PROVIDED AND INSTALLED	EXISTING	YES
09	TIRE CHARGER, HUNTER REVOLUTION	OWNER PROVIDED AND INSTALLED	EXISTING	YES
10	WHEEL BALANCER	OWNER PROVIDED AND INSTALLED	EXISTING	YES
11	AIR COMPRESSOR	OWNER PROVIDED, CONTRACTOR INSTALLED	EXISTING	YES
12	UTILITY SINK	CONTRACTOR PROVIDED, CONTRACTOR INSTALLED	NEW	NO
13	WORKBENCH, SNAP-ON	OWNER PROVIDED AND INSTALLED	EXISTING	YES
14	MIG WELDER, MILLER	OWNER PROVIDED AND INSTALLED	EXISTING	YES

NOTE: FURNITURE LAYOUT FOR REFERENCE ONLY




1 EQUIPMENT PLAN




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PEC PROJECT NUMBER: 22890402




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12/31/2023
KANSAS
ARCHITECT

PROJECT NUMBER:
22890402

PROJECT TYPE:
Renovation



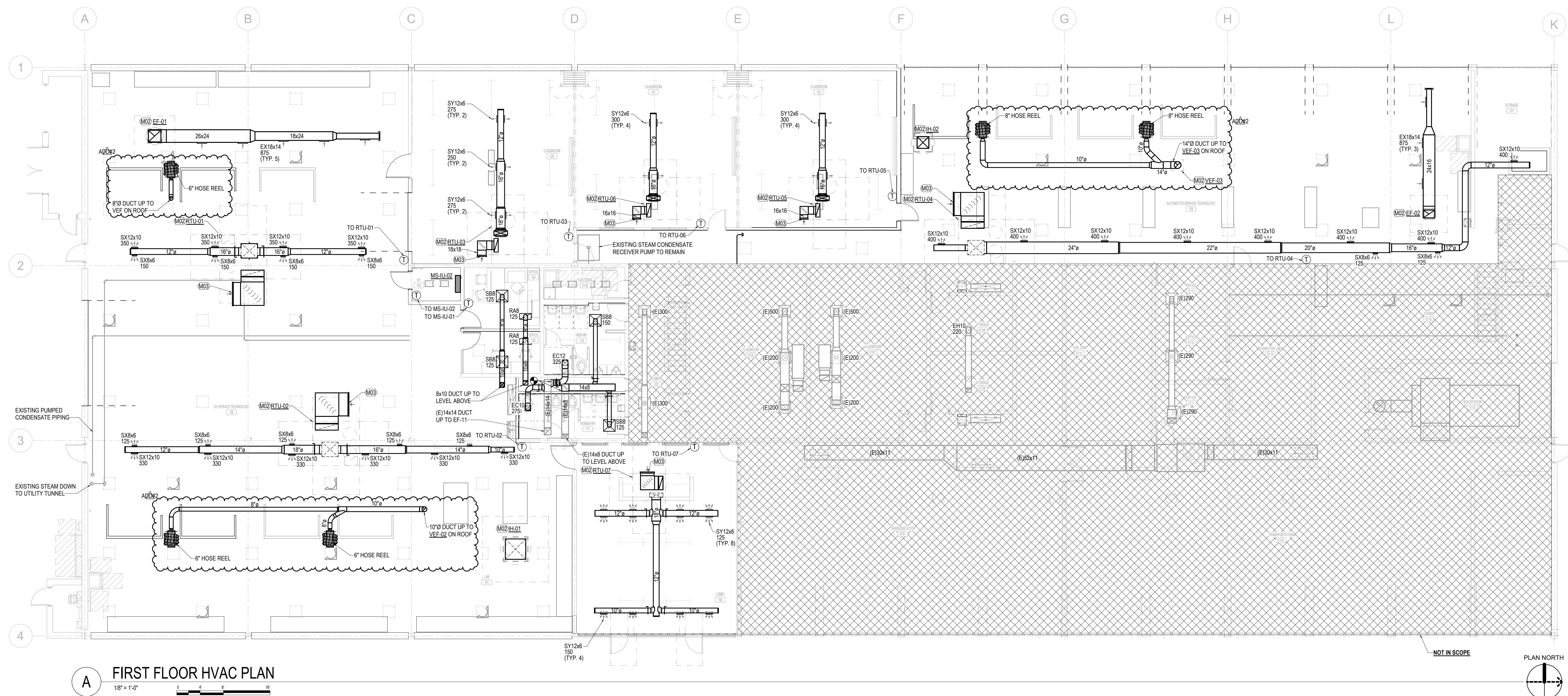
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301 S. Grove, Wichita, KS 67211
DATE: 11/17/2023 DRAWN BY: HL CHECKED BY: MFC

EQUIPMENT PLAN

A-801

CERTIFIED FINAL



M02	MECHANICAL EQUIPMENT ON ROOF.
M03	COVER RETURN OPENING WITH EXPANDED SHEET METAL WITH 70% FREE AREA.

PACKAGED RTU SCHEDULE - DX COOL GAS HEAT

REMARKS:

1. COOLING CAPACITIES ARE NET VALUES THAT INCLUDE INFILTRATION AND FAN HEAT AT SPECIFIED FLOW RATE AND STATIC.
2. TOTAL STATIC IS BASED ON UNIT PRESSURE DROP INCLUDING FILTER PRESSURE DROP AT MIDJIFE AND WET COOLING COIL WITH DAMPERS POSITIONED IN FULL OUTSIDE AIR POSITION. TSP SHALL NOT EXCEED DESIGN TSP BY MORE THAN 10%. ANY TSP RESULTING IN AN INCREASE IN MOTOR HP SHALL BE THE RESPONSIBILITY OF THE MC TO COORDINATE WITH EC AND INCUR ANY REQUIRED COST IMPACTS.
3. MAXIMUM COIL FACE VELOCITY IS THE LEAST OF MANUFACTURER'S MAXIMUM RECOMMENDED MOISTURE CARRYOVER RATES OR 650 FPM.
4. UNIT WEIGHT INCLUDES ROOF CURB AND SPECIFIED ACCESSORIES.
5. ALL MOTOR SELECTIONS ARE INTENDED TO BE NON-OVERLOADING AND HP SHALL BE NO LESS THAN 20% GREATER THAN NON-OVERLOADING BHP. VOLTAGE AND PHASE LISTED ARE APPLICABLE TO BOTH MOTORS.
6. COMPRESSOR STAGING/MODULATION SHALL BE AS FOLLOWS: RTU-01 SHALL HAVE SINGLE STAGE FIXED SPEED COMPRESSOR. RTU-02 SHALL HAVE A 2-STAGE COMPRESSOR. RTU-04 SHALL HAVE A FIXED SPEED AND AN INVERTER COMPRESSOR. RTU-03, RTU-05, RTU-06 SHALL HAVE INVERTER COMPRESSORS.
7. APD OVER HEAT EXCHANGER SHALL BE CALCULATED BASED ON TOTAL SUPPLY FAN AIRFLOW. HEATING AIRFLOW MAY BE LESS THAN TOTAL AIRFLOW DEPENDING ON IF UNIT IS VAV OR CV AND PROJECT APPLICATION.
8. PROVIDE WITH HOT GAS REHEAT ON-OFF CONTROL, 2-STAGE GAS HEAT WITH STAINLESS STEEL HEAT EXCHANGER, COMPARATIVE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF, 14" MANUFACTURER ROOF CURB, DUCT MOUNTED HUMIDITY SENSOR, HINGED ACCESS DOORS, AND PROGRAMMABLE 7-DAY THERMOSTAT.
9. PROVIDE WITH VARIABLE SPEED SUPPLY FAN, VARIABLE SPEED COMPRESSORS, MODULATING HOT GAS REHEAT, GAS HEAT WITH STAINLESS STEEL HEAT EXCHANGER, COMPARATIVE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF, 14" MANUFACTURER ROOF CURB, DUCT MOUNTED HUMIDITY SENSOR, HINGED ACCESS DOORS, AND PROGRAMMABLE 7-DAY THERMOSTAT.

MARK	MFR	MODEL	SUPPLY FAN						DX COOLING						AMBIENT TEMP (°F)	CONDENSER						COND FAN		SEER (IEER)	GAS HEAT					FILTER		ELECTRICAL				UNIT WT (LBS)	REMARKS	
			MIN OA (CFM)	FLOW (CFM)	ESP (IN WC)	DESIGN TSP (IN WC)	MOTOR		EAT		LAT		COOLING CAPACITY			COMPRESSOR						FLA	NO		AIRFLOW (CFM)	INPUT (MBH)	OUTPUT (MBH)	EAT DB (°F)	LAT DB (°F)	GAS PRESSURE (IN WC)	MERV	MIN AREA (SQ FT)	VOLT	PHASE	MCA			MOP
							HP	BHP	DB (°F)	WB (°F)	DB (°F)	WB (°F)	TOTAL (MBH)	SENS (MBH)		TYPE	RLA	NO	RLA	NO	CAP STEPS																	
RTU-01	DAIKIN	MPSA05D	250	2000	0.7	1.0	1.0	--	80	65	55	55	53.0	46.0	105	SCROLL	7.9	1	--	--	1	0.7	1	14.0	1930	75	60.7	65	94	7	8	7.0	460	3	15.0	20.0	1000	1-7, 8, ALTERNATE BID
RTU-02	DAIKIN	MPSA07H	250	2600	0.7	1.0	3.0	1.4	80	65	55	55	81.7	72.5	105	SCROLL	9.6	1	--	--	2	0.8	2	(14.6)	2600	150	121.5	65	108	7	8	11.1	460	3	19.0	25.0	1250	1-7, 8, ALTERNATE BID
RTU-03	DAIKIN	DPS004A	350	1600	0.7	1.4	4.0	0.7	80	65	55	55	44.2	44.0	105	INVRT	4.5	1	--	--	MOD	0.4	1	16.2	1600	80	64.0	65	102	7	8	7.1	460	3	10.5	15	1750	1-7, 9, BASE BID
RTU-04	DAIKIN	DPS010A	400	4000	0.7	1.3	8.0	1.3	80	65	55	55	109.7	102.0	105	INVRT	4.5	1	7.9	1	MOD+FIXED	1.8	2	(18.8)	4000	200	160	65	102	7	8	18.0	460	3	23.0	30	2750	1-7, 9, ALTERNATE BID
RTU-05	DAIKIN	DPS003A	225	1200	0.7	1.2	4.0	1.2	80	65	55	55	33.0	32.3	105	INVRT	3.5	1	--	--	MOD	0.4	1	16.5	1200	80	64	65	114	7	8	7.1	460	3	9.5	15	1750	1-7, 9, BASE BID
RTU-06	DAIKIN	DPS003A	225	1200	0.7	1.2	4.0	1.2	80	65	55	55	33.0	32.3	105	INVRT	3.5	1	--	--	MOD	0.4	1	16.5	1200	80	64	65	114	7	8	7.1	460	3	9.5	15	1750	1-7, 9, BASE BID
RTU-07	DAIKIN	DPS004A	240	1600	0.7	1.6	4.0	0.64	80	65	55	55	44.3	38.5	105	INVRT	4.5	1	--	--	MOD	0.4	1	16.2	1600	80	64	61	97.9	7	8	7.1	460	3	10.5	15	1700	1-7, 9, BASE BID

EXHAUST FAN SCHEDULE

REMARKS:

1. ALL EXHAUST FANS SHALL HAVE PERMANENTLY LUBRICATED BEARINGS AND DISCONNECT SWITCH PROVIDED AND INSTALLED BY EC.
2. DOWNBLAST AND UPBLAST EXHAUST FANS SHALL BE PROVIDED WITH ECM MOTOR, FAN SPEED CONTROLLER, BACKDRAFT DAMPER, BIRDSCREEN, INTERNAL WIRING PIGTAIL AND ROOF CURB. VFD PROVIDED BY EQUIPMENT MANUFACTURER WHERE APPLICABLE.
3. PROVIDE VEHICLE EXHAUST FAN WITH WEATHER COVER, GRAVITY SHUTTER, VIBRATION PADS, AND BELT GUARD. VEHICLE EXHAUST FAN SHALL BE EQUIPPED WITH A PRESSURE SWITCH THAT WILL AUTOMATICALLY ACTIVATE THE FAN WHEN THE HOSE IS PULLED DOWN. THE CONTROL BOX SHALL BE PROVIDED WITH AN ON/OFF SWITCH TO CONTROL THE FAN.
4. PROVIDE WITH SPRING ACTIVATED HOSE REEL, RATED FOR 600 DEGREE F CONTINUOUS USE, 32' LENGTH X 6"Ø WITH RUBBER COATED TAIL PIPE ADAPTER WITH VISE GRIP CLAMP, WORM GEAR CLAMP, INTEGRAL STOP BAR, AND TELESCOPIC LIFTING POLE.
5. PROVIDE WITH SPRING ACTIVATED HOSE REEL, RATED FOR 600 DEGREE F CONTINUOUS USE, 36' LENGTH X 8"Ø WITH STAINLESS STEEL TAPERED CONE ADAPTER WITH VISE GRIP CLAMP, LIFTING SLEEVE, INTEGRAL STOP BAR, AND TELESCOPIC LIFTING POLE. HOSE REEL SHALL BE MOUNTED TO STRUCTURE WITH SUPPORTING FRAME.

MARK	LOC. AT ROOM	MFR.	MODEL	TYPE	MIN CAP.		FAN RPM	DRIVE	MOTOR (BY M.C.)					UNIT WT. (LBS.)	REMARKS
					FLOW (CFM)	SP (IN WC)			HP	RPM	SPEED	ELEC.	START.		
EF-01	ROOF	GREENHECK	G-180-VG	DN	4,875	0.5	1325	DIRECT	2	1725	VAR	208/1	BY MFR	150	1, 2
EF-02	ROOF	GREENHECK	G-140-VG	DN	2,600	0.5	1574	DIRECT	1	1725	VAR	208/1	BY MFR	78	1, 2
EF-03	ROOF	GREENHECK	G-098-VG	DN	600	0.65	1346	DIRECT	1/4	1725	VAR	115/1	BY MFR	38	1, 2
VEF-01	ROOF	MONOXIVENT	D15-3-FMB	UTILITY	675	5.0	2255	DIRECT	1.5	1725	VAR	480/3	BY EC	200	1, 3, 4
VEF-02	ROOF	MONOXIVENT	D30-3-FMB	UTILITY	1,140	5.0	2255	DIRECT	3.0	1725	VAR	480/3	BY EC	200	1, 3, 4
VEF-03	ROOF	MONOXIVENT	BI-135	UTILITY	2,200	5.4	2914	BELT	3.0	3450	VAR	480/3	BY EC	437	1, 3, 5

ROOF HOOD SCHEDULE

REMARKS:

1. PROVIDE WITH INTEGRAL ALUMINUM BIRD AND ALUMINUM INSECT SCREEN. PROVIDE STANDARD MANUFACTURER'S ROOF CURB.
2. MOTORIZED DAMPER TO OPEN WHEN EF-01 IS ENERGIZED.
3. MOTORIZED DAMPER TO OPEN WHEN EF-02 IS ENERGIZED.

MARK	MFR	MODEL	SERVES	INTAKE OR RELIEF	HOOD SIZE (IN)			CAPACITY		MAXIMUM VELOCITY (FPM)	UNIT WT (LBS)	REMARKS
					THROAT SIZE	HOOD SIZE	HEIGHT	CFM	MAX PD (IN WC)			
IH-01	GREENHECK	GRSI-42	EV SERVICE TECH (102)	INTAKE	42.5"	63.25"	38"	4875	0.062	499	100	1, 2
IH-02	GREENHECK	GRSI-30	AUTO SERVICE TECH (126)	INTAKE	305.1"	48"	32.5"	2800	0.077	557	60	1, 3
IH-03	GREENHECK	GRSI-8	OFFICE (104)	INTAKE	8"	20.5"	19.25"	40	0.002	108	7	1

MINI SPLIT INDOOR UNIT SCHEDULE

REMARKS:

1. PROVIDE INDOOR UNIT WITH MANUFACTURER'S HARD-WIRED THERMOSTAT.
2. INDOOR UNIT IS POWERED THROUGH OUTDOOR UNIT.
3. PROVIDE WITH CONDENSATE PUMP. REFER TO DRAWINGS FOR CONDENSATE ROUTING.

MARK	LOCATION	MATCH WITH MARK	MFR	MODEL	COOLING							HEATING			ELECTRICAL				UNIT WT (LBS)	REMARKS
					CFM (MAX)	NOMINAL CAPACITY (MBH)	EAT		AMB (°F)	SEER	EER	TOT (MBH)	EAT DB (°F)	AMB (°F)	VOLT	PH	MCA	MOP		
MS-IU-01	MEZZANINE	MS-OU-01	LG	LDN097HV4	318	9.0	79	64	105	18.5	12.7	14.0	58.8	0	208	1	11.9	15	39	1, 2, 3
MS-IU-02	AV (105)	MS-OU-02	LG	LSN120HSV5	459	12.0	80	67	105	22	12.5	13.6	70	0	208	1	10	15	19	1, 2, 3

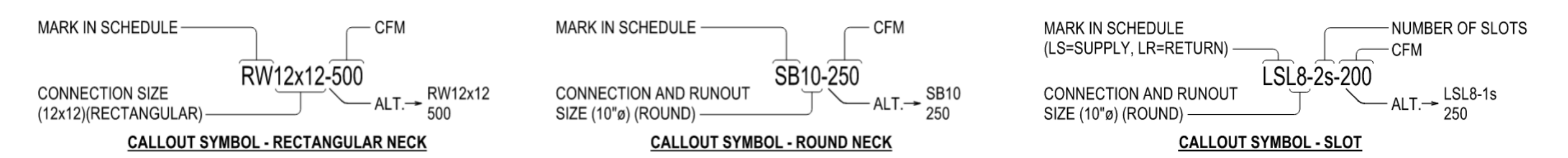
MINI SPLIT OUTDOOR UNIT SCHEDULE

REMARKS

1. PROVIDE CONDENSING UNIT WITH THIRD PARTY HAIL GUARD (TURBO EAGLE OR PRE-APPROVED EQUAL) AND PROVIDE UNIT WITH INVERTER DRIVEN COMPRESSOR. SIZE AND ROUTE REFRIGERANT PIPING PER MANUFACTURER'S INSTRUCTIONS. PROVIDE ALUMINUM JACKETING FOR ALL EXPOSED REFRIGERANT LINE-SETS.

MARK	LOCATION	MATCH WITH MARK	MFR	MODEL	COOLING				HEATING		FANS		ELECTRICAL				UNIT WT (LBS)	REMARKS
					NOM CAPACITY (MBH)	AMB (°F)	SEER	EER	CAPACITY @ 17°F	CAPACITY @ 47°F	QTY	TYPE	VOLT	PH	MCA	MOP		
MS-OU-01	ROOF	MS-IU-01	LG	LUU097HV	9.0	105	18.5	12.7		14.0	1	PROP	208	1	11.9	15	82	1
MS-OU-02	ROOF	MS-IU-02	LG	LSU120HSV5	12.0	105	22	12.5	13.8	13.6	1	PROP	208	1	10	15	75	1

GRILLE, REGISTER, AND DIFFUSER SCHEDULE



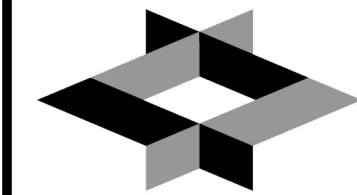
FIRST LETTER IN MARK:

- S = SUPPLY DIFFUSER
- R = RETURN GRILLE
- P = PLENUM RETURN GRILLE
- E = EXHAUST GRILLE
- L = SLOT DIFFUSER
- M = LAMINAR FLOW SUPPLY DIFFUSER
- C = SECURITY GRILLE
- U = FLOOR MOUNTED SUPPLY GRILLE

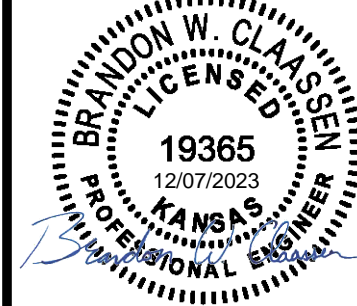
NOTES:

1. PROVIDE SQUARE TO ROUND ADAPTERS AS REQUIRED TO ACCOMMODATE ROUND RUNOUTS.
2. PROVIDE ALL LAY-IN GRDs WITH 24x24 LAY-IN PANEL AS REQUIRED.
3. FINISH TO BE WHITE UNLESS OTHERWISE SPECIFIED. COORDINATE AND VERIFY ALL FINISHES WITH ARCHITECT.
4. ALL SELECTIONS ARE BASED ON A MAXIMUM NC OF 25 UNLESS NOTED OTHERWISE.
5. CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND ASSOCIATED BORDER TYPES.
6. MARKS USED MAY NOT BE IN SEQUENCE.
7. LOUVERED GRILLES TO HAVE FRONT BLADES PARALLEL TO LONG DIMENSION UNLESS WALL MOUNTED.
8. WALL MOUNTED LOUVERED GRILLES TO HAVE FRONT BLADES PARALLEL TO FLOOR.

MARK	TYPE	IMAGE	BASED ON		MOUNT	PANEL SIZE (FACE SIZE)	MATERIAL	BLADE SPACING / SLOT WIDTH	DEFLECTION	COLOR	REMARKS
			MFR	MODEL							
SB	SUPPLY DIFFUSER		TITUS	TDC-AA	LAY-IN	24x24 (9x9)	ALUMINUM	--	--	WHITE	LOUVERED FACE
SX	DUCT MOUNTED SUPPLY		TITUS	300FS	DUCT	SEE PLANS	ALUMINUM	3/4"	DOUBLE	MATCH DUCT	--
SY	DUCT MOUNTED SUPPLY		TITUS	S300FS	DUCT	SEE PLANS	ALUMINUM	3/4"	DOUBLE	MATCH DUCT	AIR SCOOP DAMPER
RA	RETURN GRILLE		TITUS	350FL	LAY-IN	24x12 (22x10)	ALUMINUM	3/4"	35°	WHITE	--
EC	EXHAUST GRILLE		TITUS	350FL	SURFACE	12x12 (10x10)	ALUMINUM	3/4"	35°	WHITE	--
EX	DUCT MOUNTED EXHAUST		TITUS	350FL	DUCT	SEE PLANS	ALUMINUM	3/4"	35°	MATCH DUCT	--



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DATE	12/07/2023
DESCRIPTION	
ADD#2	
ADD#2	

PROJECT NUMBERS:
SNAP-H-238990-0-02
PROJECT TYPE:
Reconstruction

WICHITA STATE UNIVERSITY
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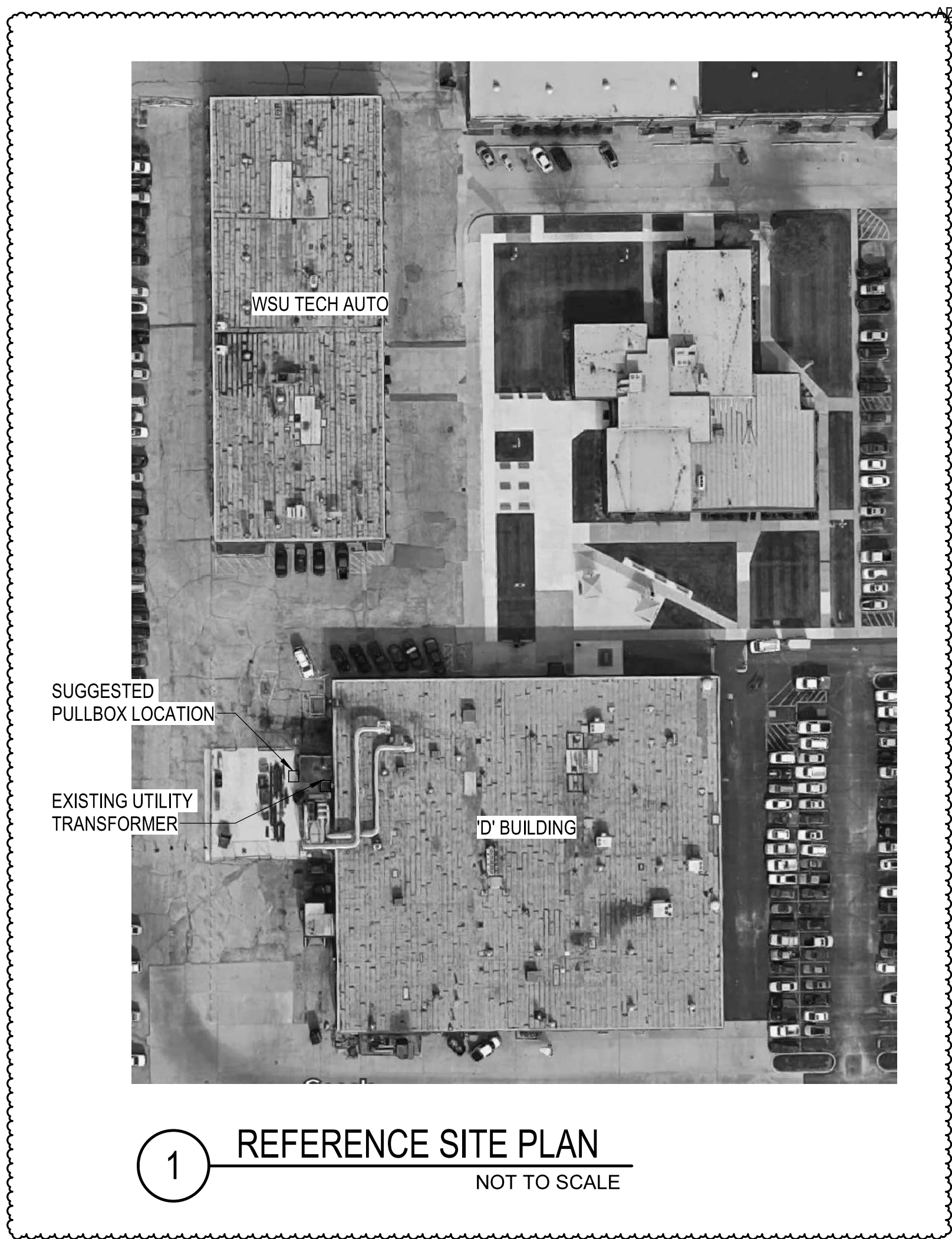
WICHITA STATE UNIVERSITY CAMPUS OF APPLIED SCIENCES AND TECHNOLOGY
EAST HIGH SNAP ON LAB
301 S. GROVE, WICHITA, KS 67211
DATE: 11/05/2023
DRAWN BY: AMB
CHECKED BY: KEH

MECHANICAL SCHEDULES

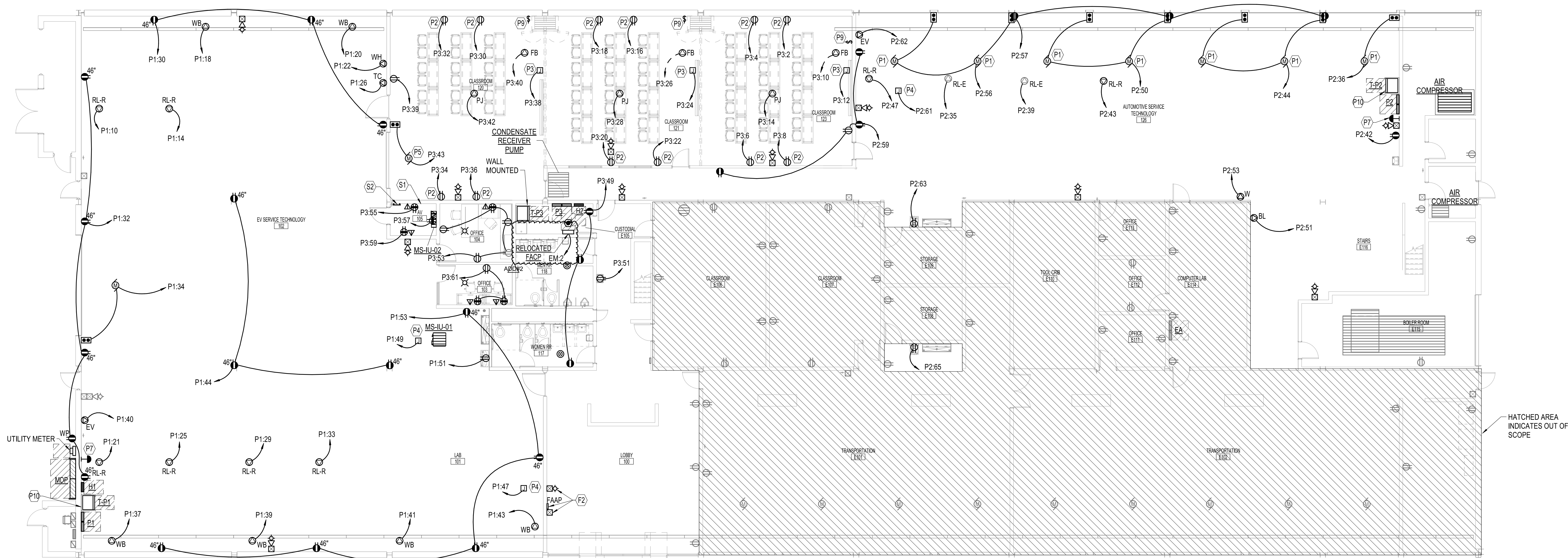
M-601

CERTIFIED FINAL

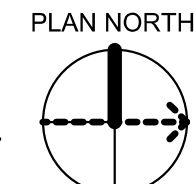
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1 REFERENCE SITE PLAN
NOT TO SCALE



A POWER & SYSTEMS PLAN - 1ST FLOOR
1/8" = 1'-0"



- KEYNOTES**
- F2 EXISTING DEVICE RELOCATED IN PROPOSED WALL.
 - P1 RELOCATED OVERHEAD DOOR POWER. PROVIDE INTERLOCKING WITH CONTROLLER AS REQUIRED.
 - P2 RECEPTACLE FOR MOVEABLE POWER POLE. POWER POLE TO BE THREAD POWER HUB OR EQUAL. VERIFY CONNECTION REQUIREMENTS WITH EQUIPMENT PROVIDED PRIOR TO ROUGH-IN.
 - P3 FUSTAT FOR LOCAL DISCONNECTING MEANS FOR POWERED SCREEN PROVIDED BY OTHERS. VERIFY CONNECTION REQUIREMENTS AND LOCATIONS WITH EQUIPMENT PRIOR TO ROUGH-IN.
 - P4 POWER FOR MOTORIZED DAMPER. PROVIDE INTERLOCKING WITH ASSOCIATED EXHAUST FAN AS REQUIRED. SEE MECHANICAL SCHEDULES FOR MORE INFORMATION.
 - P5 POWER FOR OVERHEAD DOOR. PROVIDE INTERLOCKING WITH CONTROLLER AS REQUIRED.
 - P7 EPO. EMERGENCY POWER OFF MUSHROOM PUSHBUTTON TO BE INTERLOCKED WITH ADJACENT PANEL (P1 OR P2 RESPECTIVELY). PROVIDE NAMEPLATE TO INDICATE USAGE AND ASSOCIATED PANEL.
 - P9 SWITCH FOR CONTROL OF MOTORIZED SCREEN.
 - P10 TRANSFORMER MOUNTED ON STAND AT 24" AFF. REFERENCE DETAIL XXXX.
 - S1 CONTRACTOR TO PROVIDE 3/4" X 4"W. X 8"H. AC GRADE PLYWOOD IN THIS LOCATION FOR MOUNTING OF TELECOMMUNICATIONS EQUIPMENT AND COMPONENTS. BACKBOARD SHALL BE PAINTED WITH 2 COATS OF WHITE, FIRE RETARDANT PAINT.
 - S2 TELECOMMUNICATIONS PRIMARY BONDING BUSBAR. REFERENCE DETAIL 5E-501.

- POWER GENERAL NOTES**
- BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS WITH INDIVIDUAL NEUTRALS. A MAXIMUM OF THREE CIRCUITS (MAXIMUM OF THREE PHASE CONDUCTORS) MAY BE GROUPED IN A SINGLE CONDUIT. WHERE MULTIPLE CIRCUITS ARE LOCATED IN THE SAME RACEWAY, JUNCTION BOX OR ENCLOSURE, NEUTRALS SHALL BE MARKED OR LABELED TO INDICATE WHICH CIRCUIT THEY ARE ASSOCIATED WITH. SEE SPECIFICATION SECTION "LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES" FOR ADDITIONAL INFORMATION.
 - A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL CONDUITS.
 - FOR CONNECTION REQUIREMENTS TO MECHANICAL UNITS, SEE MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
 - REFER TO THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR LOCATIONS OF FIRE RATED WALLS AND CEILINGS AND THE ASSOCIATED U.L. ASSEMBLY NUMBERS.
 - FOR ALL PENETRATIONS IN FIRE RATED WALLS AND CEILINGS, PROVIDE AN ASTM E814 COMPLIANT, U.L. LISTED THROUGH PENETRATION FIRE STOPPING SYSTEM THAT IS SPECIFIC TO THE WALL OR CEILING CONSTRUCTION ASSEMBLY. INSTALL SYSTEM IN STRICT COMPLIANCE WITH THE U.L. ASSEMBLY INDICATED IN THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
 - ALL PIPING, CONDUIT, AND OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) IN FIRE RATED WALLS OR CEILINGS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.
 - OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES OR PROTECTED BY OTHER MEANS ALLOWED BY THE SPECIFIC U.L. ASSEMBLY.
 - REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF STC RATED WALLS. OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) ON OPPOSITE SIDES OF STC RATED WALLS SHALL BE LIMITED TO TWO OUTLET BOXES PER STUD SPACE AND COVERED WITH "PUTTY PAD" TYPE MOLDABLE FIRE BARRIER.
 - FIELD VERIFY THE EXACT LOCATION OF ALL FLOOR BOXES AND WITH ARCHITECT PRIOR TO ROUGH-IN.

HAZARDOUS CLASSIFICATION:
ROOMS 101, 102, AND 126 ARE
CLASS 1 DIVISION 2 UP TO 18"
AFF. PROVIDE ALL CONDUIT
SEAL OFF'S AS REQUIRED PER
N.E.C. FOR ALL CONDUIT
ENTERING AND EXITING THE
SPACES.

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PROJECT NUMBER: 228090-042
PEC
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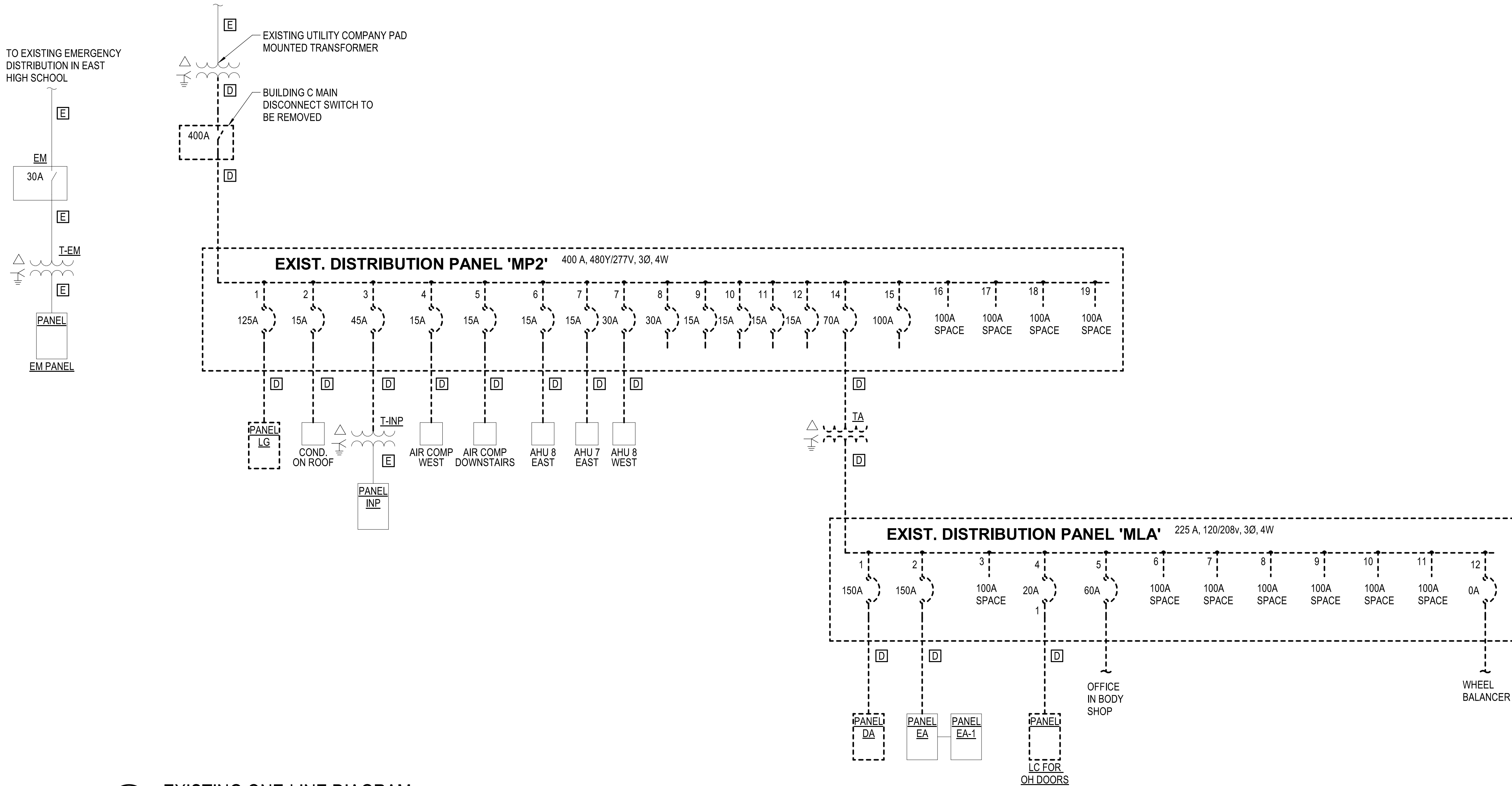
PROJECT NUMBERS:
SHEET # 228090-042
PROJECT TYPE:
Renovation

WICHITA STATE UNIVERSITY CAMPUS OF APPLIED SCIENCES AND TECHNOLOGY
228090-042 WSU TECH AUTO
301 S. Grove, Wichita, KS 67211
DATE: 11/08/2023
DRAWN BY: ERSB
CHECKED BY: KAE

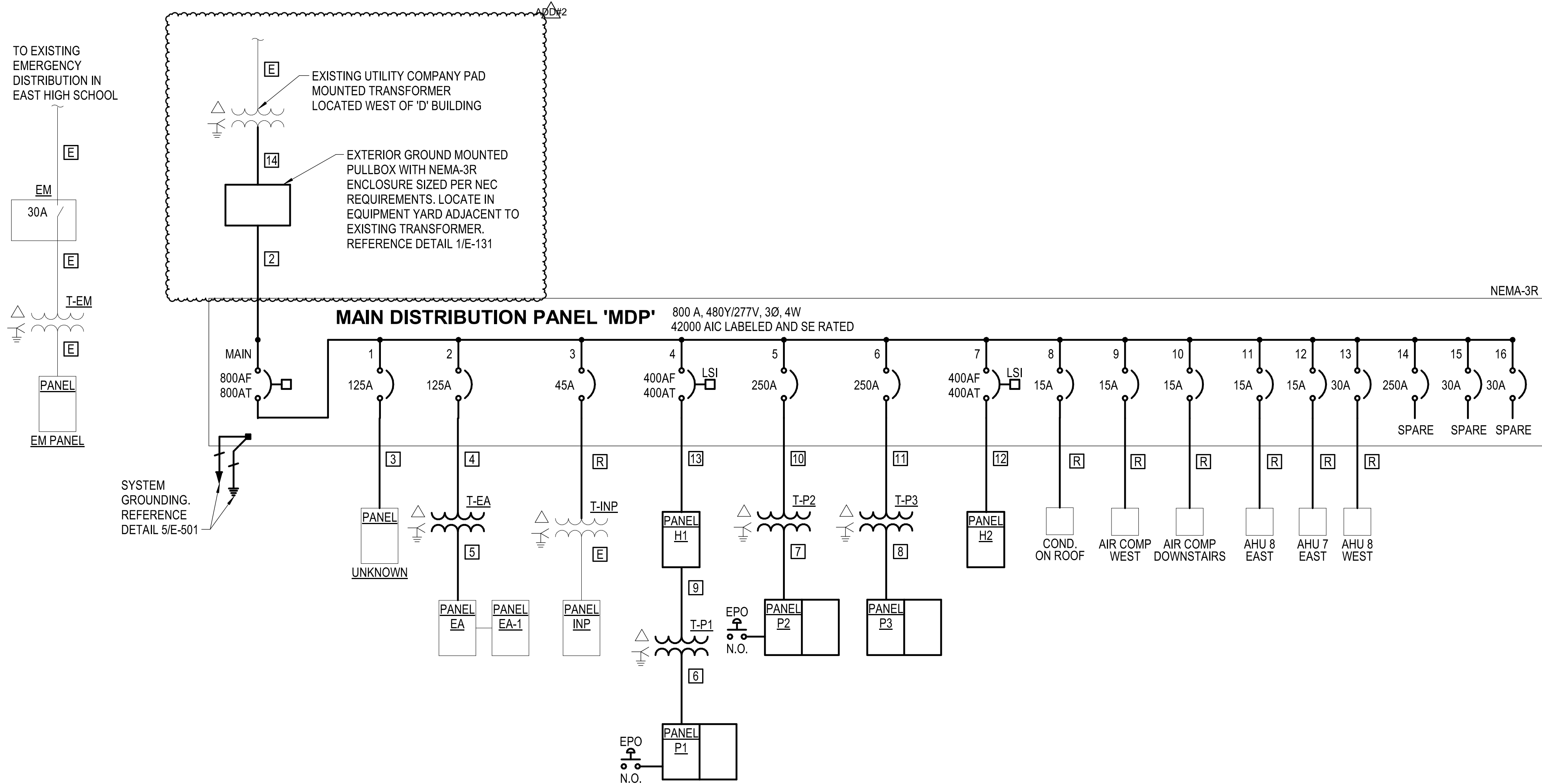
POWER & SYSTEMS PLAN - 1ST FLOOR

E-131

CERTIFIED FINAL



1 EXISTING ONE-LINE DIAGRAM
NOT TO SCALE



2 ONE-LINE DIAGRAM PROPOSED
NOT TO SCALE

ONE-LINE DIAGRAM GENERAL NOTES

- UNLESS OTHERWISE NOTED, ALL CIRCUIT BREAKERS AND/OR SWITCHES ARE THREE POLE.
- ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A LIGHT LINE, IS EXISTING TO REMAIN.
- ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A DARK LINE, IS NEW WORK UNDER THIS CONTRACT.
- ALL ELECTRICAL EQUIPMENT AND WIRING SHOWN IN A DARK DASHED LINE, IS TO BE REMOVED UNDER THIS CONTRACT.

TRANSFORMER SCHEDULE

TRANSFORMER DESIGNATION	EQUIPMENT TYPE	KVA SIZE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	GROUNDING ELECTR. COND.	NOTES
T-EA	DRY-TYPE DOE 2016	75	480/3Ph/3W	208/120/3Ph/4W	#2 CU	
T-P1	DRY-TYPE DOE 2016	112.5	480/3Ph/3W	208/120/3Ph/4W	#2 CU	W/GRD. TERMINAL BAR,FLOOR MTD.
T-P2	DRY-TYPE DOE 2016	112.5	480/3Ph/3W	208/120/3Ph/4W	#2 CU	W/GRD. TERMINAL BAR
T-P3	DRY-TYPE DOE 2016	112.5	480/3Ph/3W	208/120/3Ph/4W	#2 CU	W/GRD. TERMINAL BAR,FLOOR MTD.

FEEDER SCHEDULE

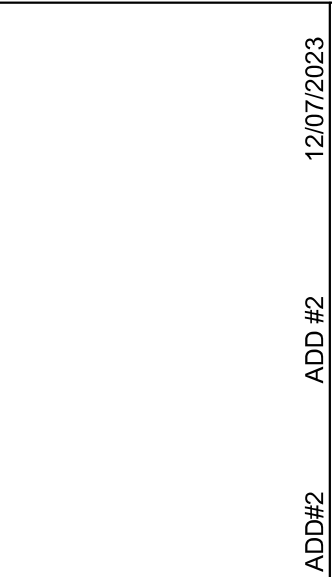
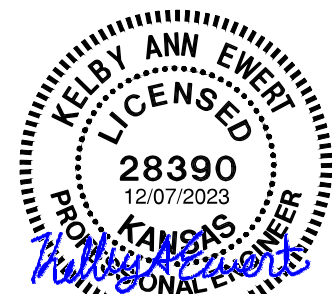
DESIG.	EQUIPMENT SERVED	CONDUCTORS		GROUND SIZE PER SET	ISOLATED GROUND SIZE	CONDUIT SIZE PER SET	SPARE CONDUIT
		SETS	NO.				
[E]	EXIST FEEDER TO REMAIN	--	--	--	--	--	--
[R]	REWORKED CONDUIT	--	--	--	--	--	--
[D]	SEE EQUIP CONN SCHED	--	--	--	--	--	--
[1]	DISCONNECT:D-MS	3	4	#300 kcmil CU	--	4"	--
[2]	DISTRIBUTION PANEL:MDP	3	4	#300 kcmil CU	#1/0	4"	--
[3]	EXIST. PANEL:UNKNOWN	1	4	#1 AWG CU	#6	2"	--
[4]	XFMR:T-EA	1	3	#1 AWG CU	#6	1-1/2"	--
[5]	EXIST. PANEL:EA	1	4	#250 kcmil CU	#2	3"	--
[6]	PANELBOARD:P1	2	4	#3/0 AWG CU	#2	2-1/2"	--
[7]	PANELBOARD:P2	2	4	#3/0 AWG CU	#2	2-1/2"	--
[8]	PANELBOARD:P3	2	4	#3/0 AWG CU	#2	2-1/2"	--
[9]	XFMR:T-P1	1	3	#250 AWG CU	#4	2-1/2"	--
[10]	XFMR:T-P2	1	3	#250 AWG CU	#4	2-1/2"	--
[11]	XFMR:T-P3	1	3	#250 AWG CU	#4	2-1/2"	--
[12]	H2	1	4	#4/0 AWG CU	#4	2-1/2"	--
[13]	H1	1	4	#4/0 AWG CU	#4	2-1/2"	--
[14]	PULLBOX	2	3	#600 kcmil CU	--	4"	--



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PROJECT NUMBERS:
GLMV-228090-042
PROJECT TYPE:
Renovation

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WICHITA STATE UNIVERSITY CAMPUS OF APPLIED SCIENCES AND TECHNOLOGY
228090-042 WSU TECH AUTO
301 S. Grove, Wichita, KS 67211

ELECTRICAL ONE-LINE
DIAGRAM

E-601

CERTIFIED FINAL

DATE: 11/08/2023
DRAWN BY: ESB
CHECKED BY: KAE

EQUIPMENT CONNECTION SCHEDULE															
MECHANICAL EQUIPMENT CONNECTIONS															
UNIT DESIG.	UNIT VOLTAGE	LOAD			PANEL DEVICE				DEVICE AT UNIT				S E	FEEDER DESCRIPTION OR SEE THE FEEDER SCHEDULE	REMARKS OR SEE THE INDICATED NOTES BELOW
		H.P.	KVA	F.L.A.	CIRCUIT NUMBER	BKR	SIN	FUSE MPS	NEW WIRE SIZE	BKR	SIN	FUSE MPS			
EF	EXHAUST FAN														
01	208/1	2	13.2	2.746	P-19	25	2			30	20	2	NEMA-3R	1	2 #10 AWG THWN, #10 AWG GRD, 1/2"
02	208/1	1	5.8	1.33	P2-66	20	2			30	15	2	NEMA-3R	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
03	120/1	0.25	5.8	0.696	P2-32	20	1			30	10	1	NEMA-3R	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
VEF	VEHICLE EXHAUST FAN														
01	480/3	1.5	3.0	2.484	H1-2	15	3						NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
02	480/3	4.4	8.8	3.901	H1-8	15	3						NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
03	480/3	4.8	9.6	4.02	H2-2	15	3						NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
IU	INDOOR UNIT														
01	208/1	0.55A	1.3	0.277	0U-01/0U-01	15	2					2	TOGGLE	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
02	208/1	0.55A	1.3	0.277	0U-02/0U-02	15	2					2	TOGGLE	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
OUI	OUTDOOR UNIT														
01	208/1	9A	11.0	2.278	P1-13	20	2			30	17.5	2	NEMA-3R	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
02	208/1	9A	11.0	2.278	P1-17	20	2			30	17.5	2	NEMA-3R	1	2 #12 AWG THWN, #12 AWG GRD, 1/2"
RTU	ROOF TOP UNIT														
01	480/3	3KVA	6.4	5.328	H2-1	20	3			30	9	3	NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
02	480/3	9.6A	16.0	13.30	H2-7	30	3			30	20	3	NEMA-3R	1	3 #10 AWG THWN, #10 AWG GRD, 3/4"
03	480/3	4.5A	8.9	3.794	H2-13	20	3			30	12.5	3	NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
04	480/3	7.0A	22.8	18.95	H2-19	30	3			30	25	3	NEMA-3R	1	3 #10 AWG THWN, #10 AWG GRD, 3/4"
05	480/3	4.5A	8.4	3.684	H2-25	20	3			30	10	3	NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
06	480/3	4.5A	8.4	3.684	H2-31	20	3			30	10	3	NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"
07	480/3	4.5A	8.4	3.684	H2-37	20	3			30	10	3	NEMA-3R	1	3 #12 AWG THWN, #12 AWG GRD, 1/2"

- ① ALL CONNECTIONS AND ELECTRICAL EQUIPMENT LISTED IN SCHEDULE SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. FIELD VERIFY CONNECTION REQUIREMENTS AND EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN.
- ② REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTIONS OF INTERLOCKING, THERMOSTAT LOCATIONS, EXHAUST FAN CONTROL SWITCHES, AND OTHER CONTROLS OF MECHANICAL EQUIPMENT.
- ③ SIZE USES FOR MOTOR FUSTATS BASED ON 125% OF MANUFACTURER'S NAMEPLATE FULL LOAD AMPEREAGE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ④ PROVIDE DUCT MOUNTED SMOKE DETECTORS IN THE SUPPLY AND RETURN DUCTS. VERIFY THE REQUIRED QUANTITY OF DUCT SMOKE DETECTORS FOR EACH UNIT WITH THE FINAL INSTALLED DUCTWORK LAYOUT TO MEET NFPA REQUIREMENTS. PROVIDE FAN SHUT DOWN RELAY TO SHUT DOWN MECHANICAL UNIT UPON ANY ALARM AT THE FIRE ALARM CONTROL PANEL.
- ⑤ DISCONNECT AND OVERLOAD PROTECTION INCLUDED IN CONTROL PANEL PROVIDED WITH MECHANICAL EQUIPMENT.
- ⑥ PROVIDE A 30A, 1 POLE, 125V, HORSEPOWER RATED TOGGLE SWITCH WITH A 125V., 3/4 HP RATED FUSTAT (EQUAL TO BUSSMAN #50Y), SIZE FUSE PER MANUFACTURER'S RECOMMENDATION.
- ⑦ MINI-SPLIT SYSTEM: INDOOR UNIT IS FED FROM THE OUTDOOR UNIT. PROVIDE INTERCONNECTING WIRING AS REQUIRED. PROVIDE A 3-POLE MANUAL MOTOR STARTING SWITCH WITHOUT OVERLOADS FOR INDOOR LOCAL DISCONNECTING MEANS. PROVIDE WITH APPROPRIATE COVERPLATE. FIELD VERIFY ALL CONNECTION REQUIREMENTS PRIOR TO ROUGH-IN WITH EQUIPMENT PROVIDED.

PANELBOARD: P3										208Y/120 VOLTS, 3 PHASE, 4 WIRE 400 AMP MAIN BKR, SURFACE MTD. 10000 AIC LABELED			
MULTI. SECTION W/FEED THRU LUGS, W/GRO. BUS													
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P	AMP SIZE	WIRE SIZE	AMP SIZE	LOAD DESCRIPTION	LOAD TYPE	V. A.	CIRC NO.		
1		EXST	REC SOUTH EAST, LOBBY	1	20	A	20	1 DEDICATED REC - CLASS 123 NE	RCPT	400	2		
3		EXST	EXHAUST FANS	1	20	B	20	1 DEDICATED REC - CLASS 123 NW	RCPT	400	4		
5		EXST	REC S EAST LOBBY	1	20	C	20	1 DEDICATED REC - CLASS 123 SW	RCPT	400	6		
7		EXST	REC - S EAST	1	20	A	20	1 DEDICATED REC - CLASS 123 SE	RCPT	400	8		
9		EXST	PLUG MOLD - LOBBY	1	20	B	20	1 FB - CLASS 123	RCPT	400	10		
11		EXST	REC - RM 203, 205	1	20	C	20	1 MOTORIZED SCREEN - CLASS 123	POWER	800	12		
13		EXST	PLUG MOLD LOBBY	1	20	A	20	1 PROJECTOR - CLASS 123	POWER	800	14		
15		EXST	GREEN MACHINE	1	20	B	20	1 DEDICATED REC - CLASS 121 NE	RCPT	400	16		
17		EXST	LIGHTS ON MEZZANINE	1	20	C	20	1 DEDICATED REC - CLASS 121 NW	RCPT	400	18		
19		EXST	REC RM 210, 211	1	20	A	20	1 DEDICATED REC - CLASS 121 SE	RCPT	400	20		
21		EXST	HOT WATER CIRC. PUMP	1	20	B	20	1 DEDICATED REC - CLASS 121 SW	RCPT	400	22		
23		EXST	LIGHTS COMP RM 3P TIME CLOCK	1	20	C	20	1 MOTORIZED SCREEN - CLASS 121	POWER	800	24		
25		EXST	EXHAUST FAN COMP ROOM	1	20	A	20	1 FB - CLASS 121	RCPT	400	26		
27		EXST	TEMP CONT COMP	1	20	B	20	1 PROJECTOR - CLASS 121	POWER	800	28		
29		EXST	REC TOOL RM	1	20	C	20	1 DEDICATED REC - CLASS 120	RCPT	400	30		
31		EXST	TEMP CONT AIR DRYER	1	20	A	20	1 DEDICATED REC - CLASS 120 NW	RCPT	400	32		
33		EXST	220V RECEPTACLE	2	20	B	20	1 DEDICATED REC - CLASS 120 SE	RCPT	400	34		
35	---	---	-----	---	---	C	20	1 DEDICATED REC - CLASS 120 SE	RCPT	400	36		
37		EXST	220V REC S EAST	1	20	A	20	1 MOTORIZED SCREEN - CLASS 120	POWER	800	38		
39	200	RCPT	REC - CLASS 120	1	20	B	20	1 FB - CLASS 120	RCPT	400	40		
41			SPARE	1	20	C	20	1 PROJECTOR - CLASS 120	POWER	800	42		
43	3819	MOTR	OVERHEAD DOOR - CLASS 120	3	20	A	20	1 REC - ROOF	RCPT	1200	44		
45	---	---	-----	---	---	B	20	1 REC - ROOF	RCPT	600	46		
47	---	---	-----	---	---	C	20	1 SPARE			48		
49	600	RCPT	REC - ELEC, RR	1	20	A	20	1 SPARE			50		
51	800	RCPT	DRINKING FOUNTAIN	1	20	B	20	1 SPARE			52		
53	1200	RCPT	REC - OFFICE 104	1	20	C	20	1 SPARE			54		
55	400	RCPT	REC - AV N	1	20	A	20	1 SPARE			56		
57	400	RCPT	REC - AV E	1	20	B	20	1 SPARE			58		
59	400	RCPT	REC - AV S	1	20	C	20	1 SPARE			60		
61	1000	RCPT	REC - OFFICE 103	1	20	A	20	1 SPARE			62		
63			SPARE	1	20	B	20	1 SPARE			64		
65			SPARE	1	20	C	20	1 SPARE			66		
67			SPARE	1	20	A	20	1 SPARE			68		
69			SPARE	1	20	B	20	1 SPARE			70		
71			SPARE	1	20	C	20	1 SPARE			72		
73			SPARE	1	20	A	20	1 SPARE			74		
75			SPARE	1	20	B	20	1 SPARE			76		
77			SPARE	1	20	C	20	1 SPARE			78		
79			SPARE	1	20	A	20	1 SPARE			80		
81			SPARE	1	20	B	20	1 SPARE			82		
83													

PANELBOARD: P3												
	CONNECTED KVA:			TOTAL	DEMAND KVA		CONF. FACTOR	SIZING AMPS:				
	PH-A	PH-B	PH-C		PH-A	PH-B		PH-C	TOTAL	PH-A	PH-B	PH-C
Receptacle	5.2	4.4	3.2	10.0	1	10.0	>	1	31.6	38.6	32.7	23.8
(First 10000VA at 1 + remainder at 0.5)				2.8	0.5	1.4						
Largest Motor	0.0	0.0	0.0	0.0	1	0.0	0.25		2.6	2.6	2.6	2.6
Motor	1.3	1.3	1.3	3.8	1	3.8			10.6	10.6	10.6	10.6
Power Factor	1.6	0.8	2.4	4.8	1	4.8			13.3	6.7	20.0	6.7
Spare					0.2	0.4			11.1	11.1	11.1	11.1
TOTAL KVA:	8.1	6.5	6.9	21.4		24.0			TOTAL AMPS:	PH-A	PH-B	PH-C
	67.3	53.9	57.3	59.5					69.3	76.3	63.7	68.1

PANELBOARD: P1										208Y/120 VOLTS, 3 PHASE, 4 WIRE 400 AMP MAIN BKR, SURFACE MTD. 22000 AIC LABELED		
MULTI. SECTION W/FEED THRU LUGS, W/GRD. BUS												
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P.	AMP SIZE	W/GRD. SIZE	AMP SIZE	P.	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1		EXIST	CAR LIFTS - SOUTH EAST	2	40	A	20	1	EXISTING REC	EXIST		2
3	-----		-----	---	B	20	1	B	20	1	EXISTING REC	EXIST
5		EXIST	CAR LIFTS - SOUTH WEST	2	40	C	15	1	POWERLOGIC DATA SWITCH	EXIST		6
7	-----		-----	---	A	20	1	A	20	1	LIGHTING - LAB 101	LIGHT
9	2746	MOTR	EF-01	2	25	B	40	2	CAR LIFT - LAB NW	POWR	6000	10
11	-----		-----	---	C	1	---	---	-----	---	---	12
13	2278	C/M	OU-01	2	20	A	40	2	CAR LIFT - LAB NE	POWR	6000	14
15	-----		-----	---	B	1	---	---	-----	---	---	16
17	2278	C/M	OU-02	2	20	C	20	1	WORKBENCH LAB - NW	RCPT	1200	18
19	-----		-----	---	A	20	1	A	20	1	WORKBENCH LAB - NE	RCPT
21	6000	POWR	CAR LIFT - LAB SW	2	40	B	20	2	WHEEL BALANCER - LAB N	EQPT	2000	22
23	-----		-----	---	C	1	---	---	-----	---	---	24
25	6000	POWR	CAR LIFT - LAB SW CENTRAL	2	40	A	30	2	TIRE CHANGER - LAB N	EQPT	3000	26
27	-----		-----	---	B	1	---	---	-----	---	---	28
29	6000	POWR	CAR LIFT - LAB SE CENTRAL	2	40	C	20	1	REC - LAB N	RCPT	600	30
31	-----		-----	---	A	20	1	A	20	1	REC - LAB W	RCPT
33	6000	POWR	CAR LIFT - LAB SE	2	40	B	20	3	OVERHEAD DOOR - LAB W	MOTR	3819	34
35	-----		-----	---	C	1	---	---	-----	---	---	36
37	1200	RCPT	WORKBENCH - LAB SW	1	20	A	1	---	-----	---	---	38
39	1200	RCPT	WORKBENCH - LAB S CENTRAL	1	20	B	50	2	EV CHARGER - LAB W	POWR	8000	40
41	1200	RCPT	WORKBENCH - LAB SE	1	20	C	1	---	-----	---	---	42
43	2000	EQPT	WHEEL BALANCER - LAB SE	2	20	A	20	1	SPARE			44
45	-----		-----	---	B	20	1	B	20	1	SPARE	46
47	400	POWR	MOTORIZED DAMPER - LAB	1	20	C	20	1	SPARE			48
49	400	POWR	MOTORIZED DAMPER - LAB	1	20	A	20	1	SPARE			50
51	1200	EQPT	DRINKING FOUNTAIN - LAB E	1	20	B	20	1	SPARE			52
53	1000	RCPT	REC - LAB E	1	20	C	20	1	SPARE			54
55			SPARE	1	20	A	20	1	SPARE			56
57			SPARE	1	20	B	20	1	SPARE			58
59			SPARE	1	20	C	20	1	SPARE			60
61			SPARE	1	20	A	20	1	SPARE			62
63			SPARE	1	20	B	20	1	SPARE			64
65			SPARE	1	20	C	20	1	SPARE			66
67			SPARE	1	20	A	20	1	SPARE			68
69			SPARE	1	20	B	20	1	SPARE			70
71			SPARE	1	20	C	20	1	SPARE			72
73			SPARE	1	20	A	20	1	SPARE			74
75			SPARE	1	20	B	20	1	SPARE			76
77			SPARE	1	20	C	20	1	SPARE			78
79			SPARE	1	20	A	20	1	SPARE			80
81			SPARE	1	20	B	20	1	SPARE			82
83			SPARE	1	20	C	20	1	SPARE			8

① PANELBOARD: P2										208Y/120 VOLTS, 3 PHASE, 4 WIRE 400 AMP MAIN BKR, SURFACE MTD. 10000 AIC LABELED		
MULTI. SECTION WFEED THRU LUGS. W/GRD. BUS												
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P	AMP SIZE	USE SIZE	AMP SIZE	P	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.
1	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	A	20	2	EXISTING ROTARY LIFT	EXST	---	2
3	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	B	1	---	-----	---	----	4
5	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	C	15	2	WHEEL BALANCER	EXST	2080	6
7	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	A	1	---	-----	---	----	8
9	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	B	20	2	EXISTING ROTARY LIFT	EXST	---	10
11	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	C	1	---	-----	---	----	12
13	---	EXST	OVERHEAD DOOR - AUTO SERVICE TECH	1	20	A	20	2	EXISTING ROTARY LIFT	EXST	---	14
15	---	EXST	CONVENIENCE REC. - AUTO SERVICE TECH	1	20	B	1	---	-----	---	----	16
17	---	EXST	OUTSIDE LIGHTS - WEST	1	20	C	20	2	EXISTING ROTARY LIFT	EXST	---	18
19	---	EXST	HYDRAULIC HOIST	1	20	A	1	---	-----	---	----	20
21	---	EXST	FIRE ALARM PANEL - MEZZANINE	1	20	B	20	2	EXISTING ROTARY LIFT	EXST	---	22
23	---	EXST	EXISTING CAR LIFTS - WEST	2	20	C	1	---	-----	---	----	24
25	---	---	---	---	1	A	20	2	EXISTING ROTARY LIFT	EXST	---	26
27	---	EXST	EXISTING CAR LIFTS - NE	2	20	B	1	---	-----	---	----	28
29	---	---	---	---	1	C	1	---	-----	---	----	30
31	---	EXST	EXISTING CAR LIFTS - SE	2	20	A	20	1	EF-03	MOTR	696	32
33	---	---	---	---	1	B	20	1	LTG - CLS-ROOMS, SERVICE	LGHT	1069	34
35	6000	POWR	CAR LIFT - AUTO SERV TECH W	2	40	C	20	3	OVERHEAD DOOR - AUTO SERV TECH E	MOTR	3819	36
37	---	---	---	---	1	A	1	---	-----	---	----	38
39	6000	POWR	CAR LIFT - AUTO SERV TECH CENTRAL	2	40	B	1	---	-----	---	----	40
41	---	---	---	---	C	20	1	---	REC. - AUTO SERV TECH E	RCPT	200	42
43	6000	POWR	CAR LIFT - AUTO SERV TECH	2	40	A	30	3	OVERHEAD DOOR - AUTO SERV TECH E CENTR	MOTR	7638	44
45	---	---	---	---	1	B	1	---	-----	---	----	46
47	6000	POWR	CAR LIFT - AUTO SERV TECH W	2	40	C	1	---	-----	---	----	48
49	---	---	---	---	A	30	3	---	OVERHEAD DOOR - AUTO SERV TECH CENTRAL	MOTR	7638	50
51	1200	POWR	BRAKE LATHE - AUTO SERV TECH	1	20	B	1	---	-----	---	----	52
53	8000	WELD	WELDER - AUTO SERV TECH	2	50	C	1	---	-----	---	----	54
55	---	---	---	---	A	30	3	---	OVERHEAD DOOR - AUTO SERV TECH W	MOTR	7638	56
57	600	RCPT	REC - AUTO SERV TECH N	1	20	B	1	---	-----	---	----	58
59	800	RCPT	REC - AUTO SERV TECH W	1	20	C	1	---	-----	---	----	60
61	400	POWR	MOTORIZED DAMPER - AUTO SERV TECH	1	20	A	50	2	EV CHARGER - AUTO SERV TECH W	POWR	8000	62
63	1200	RCPT	DRINKING FOUNTAIN - AUTO SERV TECH	1	20	B	1	---	-----	---	----	64
65	1200	RCPT	DRINKING FOUNTAIN - TRANSPORTATION	1	20	C	20	1	EF-02	MOTR	1830	66
67	---	---	SPARE	1	20	A	20	1	SPARE	---	---	68
69	---	---	SPARE	1	20	B	20	1	SPARE	---	---	70
71	---	---	SPARE	1	20	C	20	1	SPARE	---	---	72
73	---	---	SPARE	1	20	A	20	1	SPARE	---	---	74
75	---	---	SPARE	1	20	B	20	1	SPARE	---	---	76
77	---	---	SPARE	1	20	C	20	1	SPARE	---	---	78
79	---	---	SPARE	1	20	A						

PANELBOARD: P1										
	CONNECTED KVA:				DEMAND FACTOR	KVA	CONF. FACTOR	SIZING AMPS:		
	PHA	PH-B	PH-C	TOTAL				TOTAL	PHA	PH-B
Lighting	1.3	0.0	0.0	1.3	1	1.3	1.25	4.7	14.0	0.0
Receptacle	3.0	1.2	4.0	8.2	1	8.2	1	22.8	25.0	10.0
Largest Motor	0.0	0.0	0.0	0.0	1	0.0	0.25	2.6	2.6	2.6
Cooling	1.9	0.9	0.9	3.7	1	3.7	1	10.4	15.8	7.8
Motor	1.7	2.8	2.8	7.4	1	7.4	1	20.5	14.0	23.7
Equipment	2.5	4.7	1.0	8.2	1	8.2	1	22.8	25.0	39.2
Power	9.4	19.0	16.4	44.8	1	44.8	1	124.4	78.3	158.3
Spare					0.2	14.7	1	40.9	40.9	40.9
TOTAL KVA:	19.8	20.8	25.2	73.7		88.4		TOTAL AMPS:	214.1	282.6
TOTAL AMPS:	165.0	239.0	209.0	204.5				249.0	PH-A	253.5

PANELBOARD: P2										
	CONNECTED KVA:				DEMAND FACTOR	CONF. FACTOR	SIZING AMPS:			
	PH-A	PH-B	PH-C	TOTAL			TOTAL	PH-A	PH-B	PH-C
Lighting	0.0	1.1	0.0	1.1	1	1.1	1.25	3.7	0.0	11.1
Receptacle	0.0	0.6	1.0	1.6	1	1		4.4	0.0	5.0
Largest Motor	0.0	0.5	0.0	0.5	0.25	5.3		5.3	5.3	5.3
Motor	0.5	8.9	9.8	29.3	1	1		81.2	87.7	74.2
Power	0.0	1.2	1.2	2.4	1	2.4		6.7	0.0	10.0
Equipment	13.4	11.2	9.0	33.6	1	33.6		93.3	111.7	93.3
Welder	4.0	0.0	4.0	8.0	1	8.0		22.2	33.3	0.0
Existing	0.0	0.0	1.0	2.1	1	2.1	1.25	7.0	10.8	0.0
Spare					0.2	15.6		43.3	43.3	43.3
TOTAL KVA:	29.0	23.0	26.1	78.0		93.6		TOTAL AMPS:	292.4	268.0
TOTAL AMPS:	241.3	191.5	217.2	216.5				267.3	292.2	242.4

EXIST. PANEL: EM										120/240 VOLTS, 1 PHASE, 3 WIRE		
W/GRD. BUS										100 AMP MAIN BKR, SURFACE MTD.		
										65000 A/C LABELED		
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P	AMP SIZE	WIRE SIZE	AMP SIZE	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.	
1		EXIST	EM LIGHTING		20	A	20	1 FIRE ALARM	EXIST	400	2	
3		EXIST	FIRE ALARM	1	20	B	20	1 EXIT LIGHTING	EXIST		4	
5	663	LIGHT	EM LIGHTING - LAB 101	1	20	A	20	1 EM LIGHTING	EXIST		6	
7			SPACE			B		SPACE			8	
9			SPACE			B		SPACE			10	
11			SPACE			B		SPACE			12	
13			SPACE			A		SPACE			14	
15			SPACE			A		SPACE			16	
17			SPACE			A		SPACE			18	
19			SPACE			B		SPACE			20	
21			SPACE			A		SPACE			22	
23			SPACE			B		SPACE			24	

EXIST. PANEL: EM										
	CONNECTED KVA:				DEMAND FACTOR	KVA	CONF. FACTOR	SIZING AMPS:		
	PH-A	PH-B	PH-C	TOTAL				TOTAL	PH-A	PH-B
Lighting	0.7	0.0	0.0	0.7	1	0.7	1.25	3.4	6.9	0.0
Existing	0.4	0.0	0.0	0.4	1	0.4	1.25	2.1	4.2	0.0
Spare					0.2	0.2	1	0.9	0.9	0.0
TOTAL KVA:	1.1	0.0	0.0	1.1		1.3		TOTAL AMPS:	PH-A	PH-B
TOTAL AMPS:	8.9	0.0	0.0	4.4				6.4	12.0	0.9

(1)(2)(3)(4)

LIGHTING FIXTURE SCHEDULE

(P.E.C. - TULSA)

- GENERAL CONTRACTOR SHALL PROVIDE FIREPROOFING AROUND RECESSED FIXTURES INSTALLED IN FIRE RATED CEILING PER U.L. REQUIREMENTS. ELECTRICAL CONTRACTOR WILL COORDINATE.
- MANUFACTURERS LISTED IN THIS SCHEDULE OR APPROVED BY WRITTEN ADDENDUM WILL BE THE ONLY APPROVED MANUFACTURERS TO BID THE LIGHTING FIXTURES FOR THIS PROJECT. CONTRACTORS AND SUPPLIERS USING PRICING FROM MANUFACTURERS NOT LISTED ON SCHEDULE OR BY ADDENDUM DO SO AT THEIR OWN RISK.
- LIGHT FIXTURE SELECTIONS ARE BASED ON THE MANUFACTURER IN THE LEFT MOST COLUMN AS LISTED IN THE SCHEDULE. FIXTURES APPROVED AS EQUALS IN THIS SCHEDULE OR BY ADDENDUM SHALL BE EQUAL TO THE UNIT SPECIFIED IN THE LEFT MOST COLUMN, IE: SPRING LOADED LATCHES, POST PAINTED FINISH, PHOTOMETRICS.
- ALL LIGHT FIXTURES SHALL BE SECURED TO THE CEILING FRAMING SYSTEM BY MECHANICAL MEANS (SUCH AS BOLTS, SCREWS, OR RIVETS) OR BY CLIPS IDENTIFIED FOR USE WITH THE TYPE OF CEILING FRAMING MEMBER AND LIGHT FIXTURE.
- LIGHT FIXTURES SHALL BE PROVIDED WITH 0-10V DIMMING DRIVERS. DRIVERS SHALL BE CAPABLE OF DIMMING TO A MINIMUM OF 10% TOTAL LIGHT OUTPUT. LED DRIVERS SHALL HAVE A DISCONNECTING MEANS MEETING THE REQUIREMENTS OF NEC SECTION 410.130(G), EXCEPT FOR THOSE INSTALLED IN CORD AND PLUG CONNECTED FIXTURES. WHERE APPLICABLE, WHEN DIMMING SWITCHES ARE NOT PROVIDED AS PART OF THE DESIGN, CONTRACTOR SHALL CAP OFF THE 0-10V DIMMING WIRES FOR FUTURE EXTENSION BY THE OWNER.
- PROVIDE ARROWS AND FACES AS INDICATED ON THE DRAWINGS.
- TO COMPLY WITH NEC SECTION 410.130(G), ALL EXISTING OR RELOCATED LIGHT FIXTURES WITHOUT A BALLAST OR DRIVER DISCONNECTING MEANS SHALL HAVE A BALLAST OR DRIVER DISCONNECTING MEANS INSTALLED UNDER ANY OF THE FOLLOWING CONDITIONS:
 - WHEN AN EXISTING BALLAST OR DRIVER IS REPLACED.
 - WHEN AN EXISTING LIGHT FIXTURE IS RELOCATED.
 - WHEN AN EXISTING LIGHT FIXTURE IS RECIRCUTED.
- UNLESS OTHERWISE NOTED, PROVIDE WITH [30" ROUND STRAIGHT STEEL] [] POLE WITH HANDHOLE & BOLT COVERS. POLE TO MEET TOTAL FIXTURE EPA REQUIREMENTS AT 110MPH WITH 1.3 GUST FACTOR.

MARK	DESCRIPTION	MANUFACTURER 1 CATALOG NUMBER	MANUFACTURER 2 CATALOG NUMBER	MANUFACTURER 3 CATALOG NUMBER	MANUFACTURER 4 CATALOG NUMBER	LIGHT SOURCE				LENS/LOUVER/FINISH	DIMENSIONS			REF. NOTE	REMARKS
						#	TYPE	WATTS	VOLTS		W	L	D		
D	EXISTING FIXTURE TO BE REMOVED					0		0			<varies>	<varies>	<varies>		
E	EXISTING FIXTURE TO REMAIN					<varies>		0			<varies>	<varies>	<varies>	<varies>	
F4	4' STRIP	LITHONIA ZL1N L48 5000LM FST MVOLT 35K 80CRI WH	WILLIAMS 7SS-4 L50/835-DIM-UNV	DAY-BRITE FSS45SL835-UNV-DIM	ILP FZ4-40W-U-35-FRAL-BLD	1	LED	45	UNV	ACRYLIC				8	5000LM; 3500K; 80CRI
KA	2X2 LAY-IN	HE WILLIAMS AT1-22-L40-8-35-D-DIM-UNV	MARK ARCHITECTURAL VHSR-2X2-80CRI-35K-40 00LM-MIN10-MVOLT-SWC-ZT	ILP VAT22-36L-U-35-DIM1	OR PREAPPROVED EQUAL	1	LED	18	UNV	ACRYLIC	2.0	2.0	0.33	5	2000LM; 3500K; 80CRI
KB	2X2 LAY-IN	WILLIAMS GH-2-L240-835-FA	ILP EDV2-24L-U-35-FRL	OR PREAPPROVED EQUAL		1	LED	29	UNV	ACRYLIC	2.0	2.0	0.33	5	8000LM; 3500K; 80CRI
L1	4" RECESSED LINEAR	ALCON LIGHTING 12100-10-R-4-L93-35K-FR-WH	LUMENWERX VIA1.5R-D-HLO-FH-SW-80- 900LMF-35K-4-UNV-D1-1C -DMF-W	MARK ARCHITECTURAL SL1L-LOP-4FT-FL-90CRI-3 5K-1000LMF-MIN1-MVOLT-ZT	AXIS LIGHTING SCR-900-80-35-FL-4FT-W- UNV-DP-1-DF	1	LED	45	UNV	ACRYLIC					3720LM; 3500K; 80CRI
L6	6' SUSPENDED LINEAR	LUMENWERX VIA4P-D-HLO-FH-CLO-SW- 80CRI-1000LMF-350LMF-3 5K-6FT-UNV-D1	MARK ARCHITECTURAL S4PID-L1P-6FT-MSLS-80C RI-35K-1000LMF-180CRI-13 5K-1400LMF-SCT-MIN1-FLL -MVOLT-WHTT-ZT-F272A- RDCY-WHTCY-WCRD	PRUDENTIAL LIGHTING BPRO4-FLSH-LED35-HO-8 -TMW-SAL-MCW-SC-UNV- CA96-DM01	OR PREAPPROVED EQUAL	1	LED	45	UNV	ACRYLIC					4000LM; 3500K; 80CRI
WA4	WALL PACK - TYPE IV	LITHONIA WDGE4 LED-P2-40K-80CRI-RFT-M VOLT-SRM-DDBXD	VERSALED LIGHTING VLWP16-B-2L-QT-MCT	COOPER LIGHTING GWC-SA2-D-740-U-T4FT-B Z	OR PREAPPROVED EQUAL	1	LED	49	UNV	DARK BRONZE	1.15	1.25	0.77		4000LM; 4000K; 70CRI
X1	PENDANT MOUNTED EXIT SIGN	DUAL LITE SESRBN	HIGH-LITES ZCLED-2-R	LITHONIA LE-S-1-R	SURE-LITES CX-6-1-R	1	LED	5		CAST ALUMINUM					RED W/OUT BAT.; PENDANT MOUNTED
XA	1 FACE/EM EXIT	MULE MD-B-U-R-BA	DUAL-LITE SESRBNE	LITHONIA LE S 1 R EL N	CURRENT CCESRE	1	LED	5	UNV	CAST ALUMINUM	0.71	1.06	0.17	6	RED W/BATTERY

PANELBOARD: H1

										480Y/277 VOLTS, 3 PHASE, 4 WIRE 225 AMP MLO, SURFACE MTD. 42000 AIC LABELED									
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P	AMP SIZE	WIRE SIZE	AMP SIZE	WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.							
1		EXIST	LIGHTS - 213, 216, 218, 220	20	A	20	3	VEF-01		MOTR	2494	2							
3		EXIST	LIGHTS - 211	20	B							4							
5		EXIST	LIGHTS - 214, 217, 219, 222, 221	20	C							6							
7		EXIST	LIGHTS - 210	20	A	20	3	VEF-02		MOTR	3991	8							
9		EXIST	LTS - 203-208, 210	20	B							10							
11		EXIST	LIGHTS - EAST NORTH	20	C							12							
13		EXIST	NIGHT LIGHTS - NORTH EAST	20	A	20	1	SPARE				14							
15		EXIST	LIGHTS - NORTH CENTER	20	B	20	1	SPARE				16							
17		EXIST	BATTERY EM LIGHTS	20	C	20	1	SPARE				18							
19		EXIST	LIGHTS - SOUTH EAST	20	A	20	1	SPARE				20							
21		EXIST	LIGHTS - SOUTH CENTER	20	B	20	1	SPARE				22							
23		EXIST	LIGHTS - SOUTH WEST	20	C	20	1	SPARE				24							
25		EXIST	LIGHTS - SOUTH EAST	20	A	20	1	SPARE				26							
27		EXIST	LIGHTS - SOUTH WEST	20	B	20	1	SPARE				28							
29		EXIST	LIGHTS - NORTH WEST	20	C	20	1	SPARE				30							
31		EXIST	LIGHTS - NORTH WEST	20	A	20	1	SPARE				32							
33		EXIST	LIGHTS - WEST CENTER	20	B	20	1	SPARE				34							
35		EXIST	LIGHTS - LOBBY	20	C	20	1	SPARE				36							
37		EXIST	OUTSIDE MV LIGHTS	20	A	20	1	SPARE				38							
39			SPARE	1	B	20	1	SPARE				40							
41			SPARE	1	C	20	1	SPARE				42							

PANELBOARD: H1																			
			CONNECTED KVA:				DEMAND				CONT.				SIZING AMPS:				
	PH-A	PH-B	PH-C	TOTAL	FACTOR	KVA	FACT								TOTAL	PH-A	PH-B	PH-C	
Largest Motor	0.0	0.0	0.0	0.0	1	0.0	0.25								1.2	1.2	1.2	1.2	
Motor	2.2	2.2	2.2	6.5	1	6.5	1								7.8	7.8	7.8	7.8	
Spare					0.2	1.3	1								1.6	1.6	1.6	1.6	
TOTAL KVA:	2.2	2.2	2.2	6.5		7.8													
TOTAL AMPS:	7.8	7.8	7.8	7.8											10.6	10.6	10.6	10.6	

PANELBOARD: H2

PANELBOARD: H2										480Y/277 VOLTS, 3 PHASE, 4 WIRE 225 AMP MLO, SURFACE MTD. 42000 AIC LABELED			
W/GRD. BUS													
CIRC NO.	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION	P	AMP SIZE	WIRE SIZE	AMP SIZE	WIRE SIZE	LOAD DESCRIPTION	LOAD TYPE	LOAD V. A.	CIRC NO.	
1	5328	C/M	RTU-01	3	20	A	20	3	VEF-03		MOTR	9145	2
3	---	---	---	---	B	---	---	---	---	---	---	---	4
5	---	---	---	---	C	---	---	---	---	---	---	---	6
7	13302	C/M	RTU-02	3	25	A	20	3	SPARE		---	---	8
9	---	---	---	---	B	---	---	---	---	---	---	---	10
11	---	---	---	---	C	---	---	---	---	---	---	---	12
13	7394	M/C	RTU-03	3	20	A	20	3	SPARE		---	---	14
15	---	---	---	---	B	---	---	---	---	---	---	---	16
17	---	---	---	---	C	---	---	---	---	---	---	---	18
19	18956	C/M	RTU-04	3	30	A	20	3	SPARE		---	---	20
21	---	---	---	---	B	---	---	---	---	---	---	---	22
23	---	---	---	---	C	---	---	---	---	---	---	---	24
25	6984	M/C	RTU-05	3	20	A	20	3	SPARE		---	---	26
27	---	---	---	---	B	---	---	---	---	---	---	---	28
29	---	---	---	---	C	---	---	---	---	---	---	---	30
31	6984	M/C	RTU-06	3	20	A	20	3	SPARE		---	---	32
33	---	---	---	---	B	---	---	---	---	---	---	---	34
35	---	---	---	---	C	---	---	---	---	---	---	---	36
37	6984	M/C	RTU-07	3	20	A	20	3	SPARE		---	---	38
39	---	---	---	---	B	---	---	---	---	---	---	---	40
41	---	---	---	---	C	---	---	---	---	---	---	---	42

PANELBOARD: H2																			
	CONNECTED KVA:				DEMAND				CONT. FACT		SIZING AMPS:								
	PH-A	PH-B	PH-C	TOTAL	FACTOR	KVA	FACT			TOTAL	PH-A	PH-B	PH-C						
Largest Motor	0.0	0.0	0.0	0.0	1	0.0	0.25			2.8	2.8	2.8	2.8						
Cooling	11.1	11.1	11.1	33.3	1	33.3	1			40.1	40.1	40.1	40.1						
Motor	13.9	13.9	13.9	41.7	1	41.7	1			50.2	50.2	50.2	50.2						
Spare					0.2	15.0	1			18.1	18.1	18.1	18.1						
TOTAL KVA:	25.0	25.0	25.0	75.1				90.1	TOTAL AMPS:	PH-A	PH-B	PH-C							
TOTAL AMPS:	90.3	90.3	90.3	90.3					111.1	111.2	111.2	111.2							